RADFORD ARCHITECTURAL CO.
407 South Dearborn St.
CHICAGO, -:- -:- ILLINOIS

FARM
AND
BUILDING BOOK

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Our Farm and Building Book

Edited by Wm. A. Radford,

President of The Radford Architectual Co., and Radford Publications

Farming, a Profession

Time was when the brainiest boys were urged to enter the so-called "professions." If Frank and Jim were bright boys in school, and John was rather slow, the smarties were set to college, and John was assigned to the farm. There has been a change lately, and people generally have waked up to the fact that a good farmer needs a better education than anyone else.

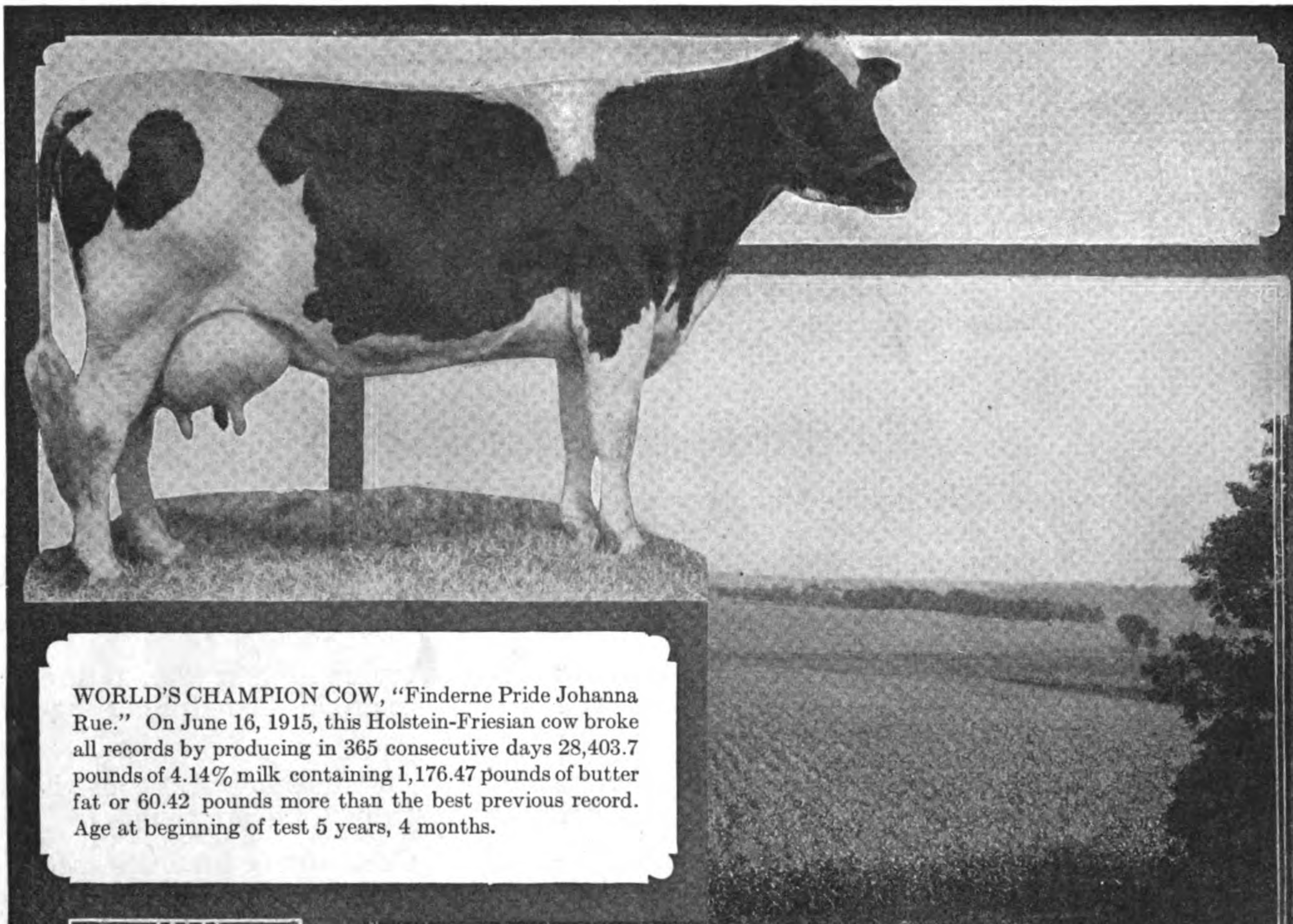
In this book are a few hints of the possibilities of the soil, trying to show what nature will do if we treat the soil right. These hints are necessarily more in the nature of suggestions than instructions.

Farming is a life-long study, and so far, farmers have been handicapped because it is difficult to get at the really fundamental principles, or the "why" of doing things.

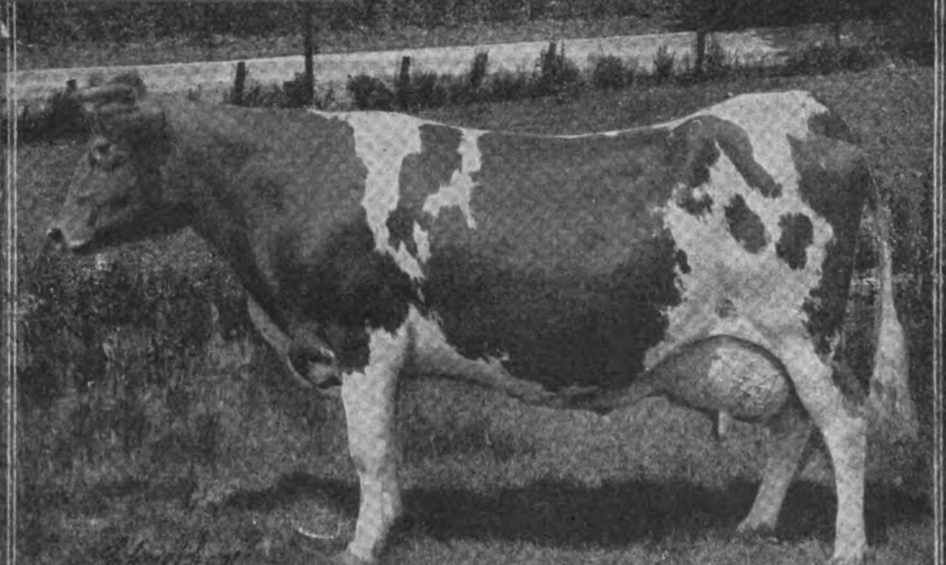
A doctor or lawyer, to be successful, should confine his efforts to one branch of the medical or law profession; but this will not work in farming. Diversified farming is the only kind of farming that has ever proven successful. Now, it is so arranged that a farmer may specialize in one branch, dairying for instance; but he must know how to treat the soil in order to grow the right kind of crops and in sufficient quantities to make his dairy a paying proposition.

A farmer must be familiar with the types and breeds of domestic animals, sufficient at least to recognize their principal points of merit. He must know how milk is manufactured in the cow's udder in order to mix feeding rations to produce the best results. He must understand silos. He must know how to train a colt. He must be good enough mechanic to keep his buildings in repair and know when he needs new ones. He must be a veterinarian, a civil engineer and a soil expert, so far as his own soil and conditions are concerned. He must know a whole lot of things besides these in order to make a success of his profession. And to be a good citizen he must do everything in his power to better the town and the community.

Modern Farm Buildings on "Sedgeley" Dairy Farm Near Hinsdale, Ill.



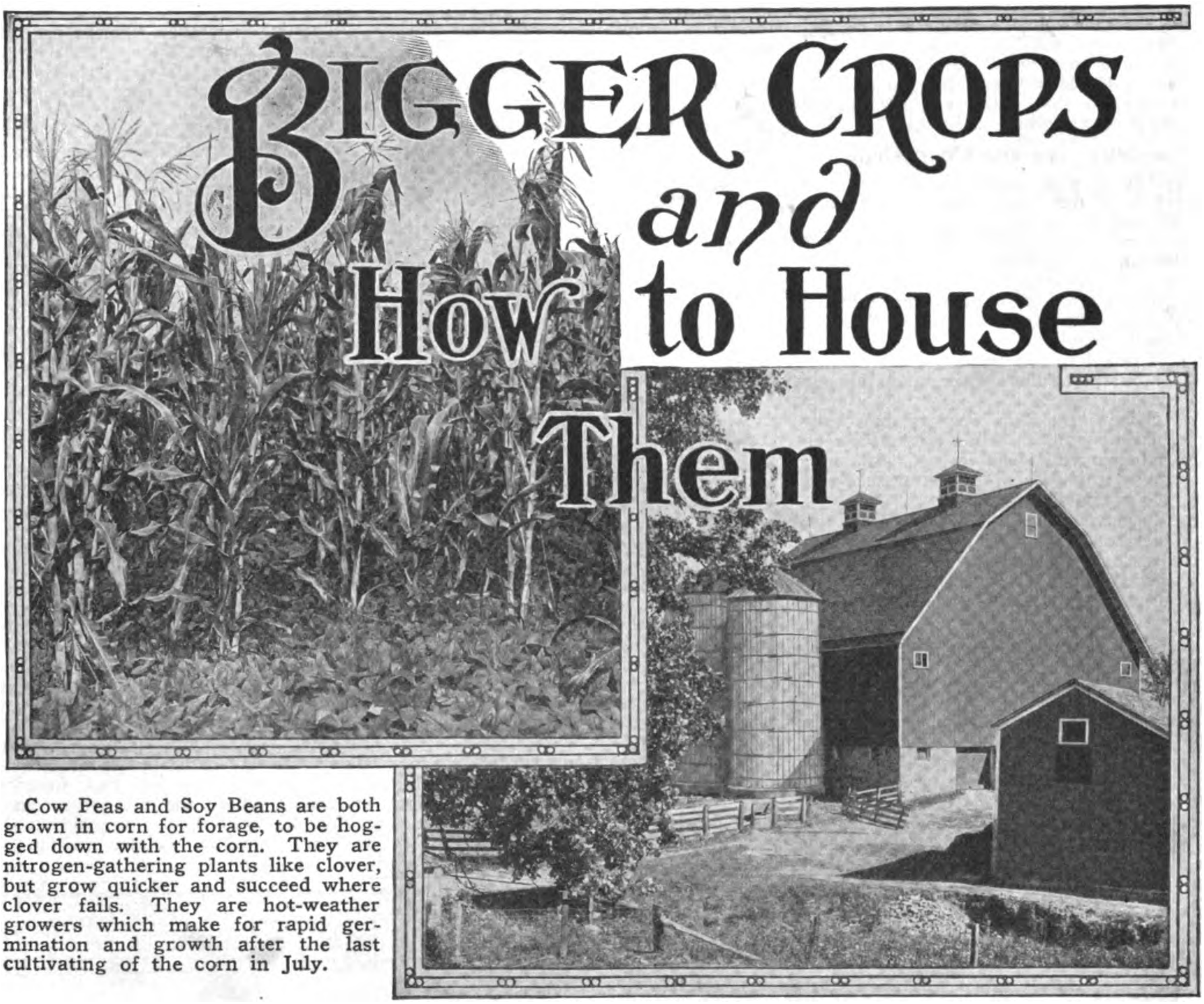
WORLD'S CHAMPION COW, "Finderne Pride Johanna Rue." On June 16, 1915, this Holstein-Friesian cow broke all records by producing in 365 consecutive days 28,403.7 pounds of 4.14% milk containing 1,176.47 pounds of butter fat or 60.42 pounds more than the best previous record. Age at beginning of test 5 years, 4 months.



TWO FAMOUS DAIRY COWS

Above, the present "Queen of All Dairy Cows"; below, the famous Guernsey cow, "May Rilma" who held the World's Record throughout 1914 with a 365 day yield of 19,673 pounds of 5.5% milk containing 1,073.41 pounds of butter fat.

BIGGER CROPS and How to House Them



Cow Peas and Soy Beans are both grown in corn for forage, to be hogged down with the corn. They are nitrogen-gathering plants like clover, but grow quicker and succeed where clover fails. They are hot-weather growers which make for rapid germination and growth after the last cultivating of the corn in July.

More Farm Buildings and Better Ones

A good farm is worth good buildings.

Any farm is good that provides a living for the family.

Comfortable buildings help to make a poor farm good and a good farm better.

Even the land that has been ruined and "turned out to the Lord" may be brought back to life by the aid of live stock; but first you must have buildings and fences to make the live stock comfortable.

Each farm is shy a building or two, and most farms need more fencing. Fences for range, health and pasture; barns and stables for storage and winter feeding.

Economy in business often means spending money for necessary improvements.

If animals require all their feed to keep them alive and warm, then the grain is being burned for fuel, while the animals are marking time. Time may not be much of an object to the animal, but it is to the owner.

Great Value of Farm Buildings

The strongest argument in favor of good buildings on a farm is a visit to a well managed stock farm.

Good buildings convert scrub animals into grades. The grades soon give way to pure breeds. Pure bred stock is the surest sign of farm prosperity.

We don't really own our land until we have it well fenced. We don't really own our own live stock until we have proper buildings to house them.

Saving the waste makes the profit. A farm barn is a farm factory. Waste material is a by-product in disguise. What was formerly waste is now worked into salable merchandise.

Farm buildings are farm factories. The soil produces the raw materials which are taken to the farm shops and made into high-priced butter, beef, mutton and pork.

By means of farm buildings, we are enabled to sell our corn for $2 per bushel by shipping it in pig skins.

Formerly beef cattle were raised on the open range. It required three or four years to produce a beef steer, because they were left out in the cold to hustle for themselves all winter. The grass was partly covered with snow and occasionally the water was frozen so the animals could neither eat nor drink for days at a time. Mortality among range cattle often reached such figures as 50 per cent, and the ones to survive the winter were lighter in the spring than they were in the fall.

In a warm stable we can coax a baby beef to weigh a thousand pounds before it is a year old.

A farm with poor buildings is at the mercy and caprice of speculators. Grain must be threshed and marketed, regardless of the season.

Before the time of good farm buildings, grain sold for little money and a great deal of it was wasted between the field and the cash returns. Increase in the value of live stock has changed the whole farming business. When corn is cheap, instead of feeding it into a heating stove, farmers feed it to cattle and hogs. A good live-stock farm is a busy place. It furnishes something of interest every hour of the day. The live-stock population on a well-managed farm increases each year. The increase demands greater accommodation, so that we must repair the old buildings and we must build new ones.

This is just the same as manufacturing in other lines; no man can remain stationary, and prosper. Factories of all kinds must throw out good machinery that is little the worse for wear, because new processes have been invented and the manufacturer is obliged to keep up with the times. The farmer is no exception.

The man who keeps good stock and builds good buildings to house them, is the man to succeed and build up a business that will give him an enviable reputation that will reach far beyond the county in which he lives.

Improve the Corn Crop

The average yield of corn for the whole of the United States is less than 28 bushels per acre.

Some farm yields in each state exceeded seventy bushels, and it is possible to make it ninety.

There are a great many angles to the corn-growing problem that we "haven't wised up on."

There may be a better variety of corn for our particular section than the one we are raising.

Some seed corn breeders may have different ways of pollenating pedigreed seed that we haven't learned. It might pay us to buy some high brow seed and give it a good tryout.

It may be possible that we have too many root lice or bill bugs, or too much corn smut, or too many cut worms that should be cut out because they cut off the young corn plants and cut down the yield.

When one of our neighbor boys raises a corn acre under competition and harvests one hundred bushels of shelled corn, we are too stiff necked to take off our hat to that boy.

If we should invite him to help us eat a turkey dinner some Sunday, he might tell us something to keep our corn thinker busy until next planting time.

One reason why our corn don't turn out better is because we don't do enough corn head work in winter.

When the head "guy" at the state college arranges a winter short-course it would pay us to pay him a visit. It would brush some of the cobwebs out of our brain works to be real school boys again. We can't remain stationary. We must improve or go dead.

If we are making less than seventy bushels of corn to the acre, we are wrong somewhere. If we are getting seventy, then we must try for eighty.

We can't increase our corn yield without improving the soil. If we improve our soil we enrich our children's inheritance.

Humid Irrigation to Save the Crops in Dry Times

In some parts of the Middle West, pumping water for irrigation may be obtained in great quantity at comparatively shallow depths.

Irrigation by pumping has been made possible at reasonable cost by the new crude oil engines and the improved centrifugal pumps. Makers of these pumping outfits claim that 2 acre inches of water may be elevated 60 feet in an hour at a cost of 60 cents, including the wages of an irrigator. Of course, the land is supposed to be properly prepared for irrigation with the necessary ditches, laterals, etc., to conduct the water to spread it over the field.

These figures are not worked out for the express purpose of irrigating one acre of land with 2 inches of water. It is the per acre cost when irrigating a large field.

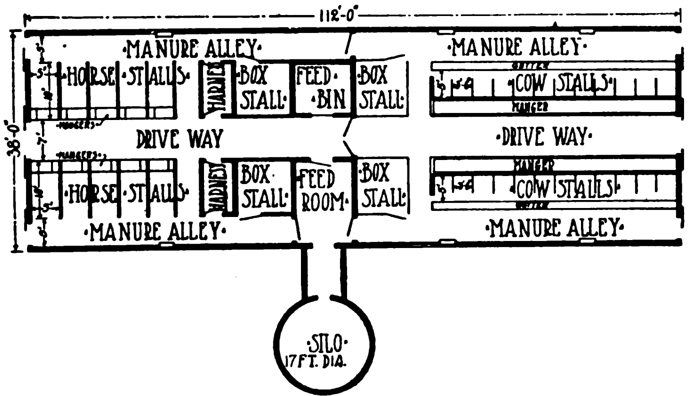
Assuming that these figures are approximately correct, then the cost is less than regular gravity irrigation in irrigation sections where the water company makes a charge for the water.

Irrigation in humid sections during a dry time in summer usually proves very profitable where the water table is within from 20 to 60 feet of the surface and where drainage may be had and other conditions are favorable. It often happens that crops are almost ruined by the lack of water just when the grain is forming.

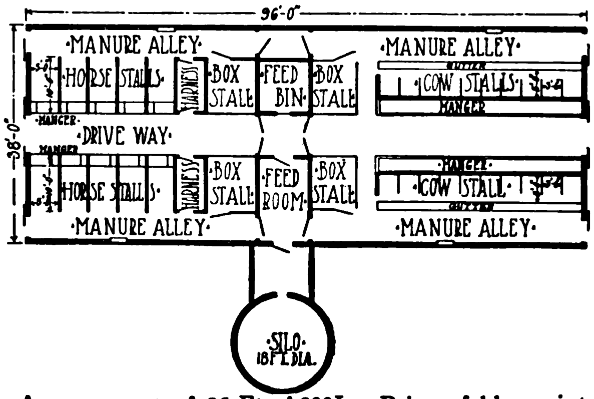
On sloping land, rows of corn may be laid out in the direction that water would naturally flow. When corn is laid by, a shovel plow would leave a corrugation between each two rows of corn that would lead the water when it is needed. On well worked corn land the water would sub from these corrugations sufficient to saturate the ground between.

All land, no matter how even it may look, must have some preparation before it may be irrigated. It must be surveyed and the main ditch built along the highest portion and so arranged that laterals may be carried to every part of the field. Bumps must be taken off with the scraper. The expense of this work depends so much on the contour of the land that no estimate can be made.

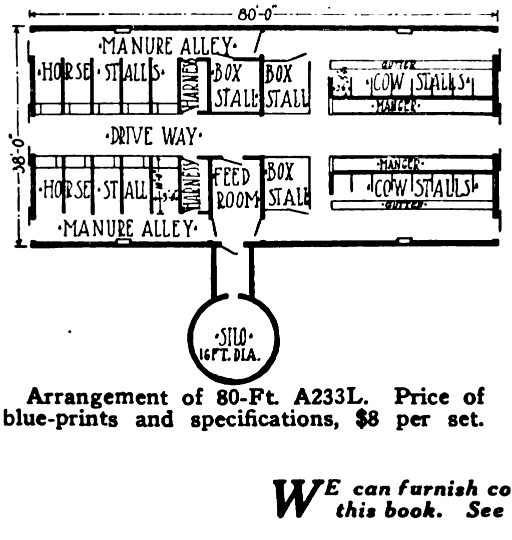
Some fields will take irrigation water almost naturally, while some lands could not be irrigated for $50 an acre. Where the first cost comes within $5 or $10, the experiment is well worth while. Water on tap in



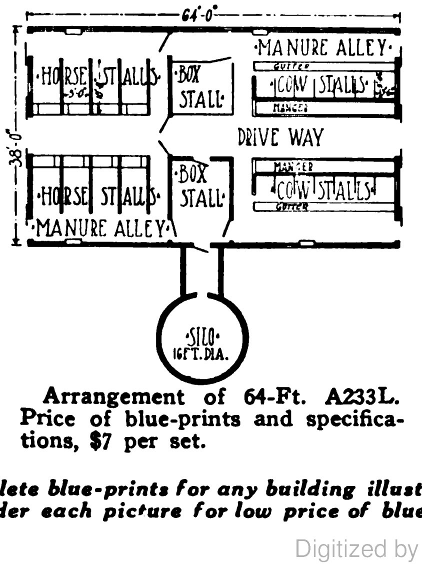
Arrangement of 112-Ft. A233L. Price of blue-prints and specifications, $10 per set.



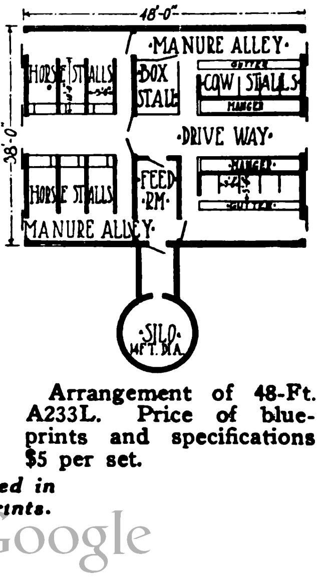
Arrangement of 96-Ft. A233L. Price of blue-prints and specifications, $9 per set.



Arrangement of 80-Ft. A233L. Price of blue-prints and specifications, $8 per set.



Arrangement of 64-Ft. A233L. Price of blue-prints and specifications, $7 per set.



Arrangement of 48-Ft. A233L. Price of blue-prints and specifications $5 per set.

WE can furnish complete blue-prints for any building illustrated in this book. See under each picture for low price of blue-prints.

time of drought is worth a great deal.

The engine may be used for other purposes, but the whole cost of the pump probably would have to be charged up to irrigation.

Our Popular "Any Length" Barn—Design A233L

This barn is 38 feet wide and it is any length you chose to make it. The floor plans illustrated show lengths of 48 feet, 64 feet, 80 feet, 96 feet and 112 feet, respectively. Any one of these plans may be built and the barn extended later to add as much length as required.

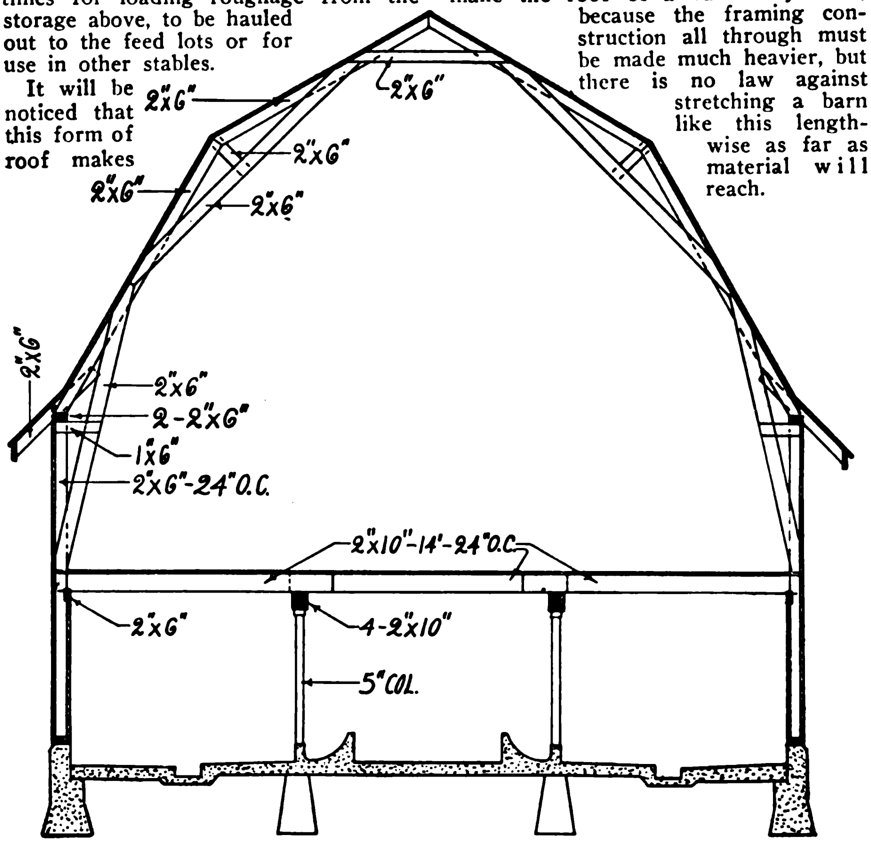
This idea works out very well for a person starting in the dairy business. Cows are expensive, and it takes a long time to gather a large herd of good cows that may be depended upon to make a profit. A man may have ready cash to go out and buy cows, still he finds that time is required to get what he wants.

With this end in view, it is a good plan to arrange the barn at the start, so the extension may be made from the cow stall end. The chances are, the farmer would not wish to increase the number of horse stalls.

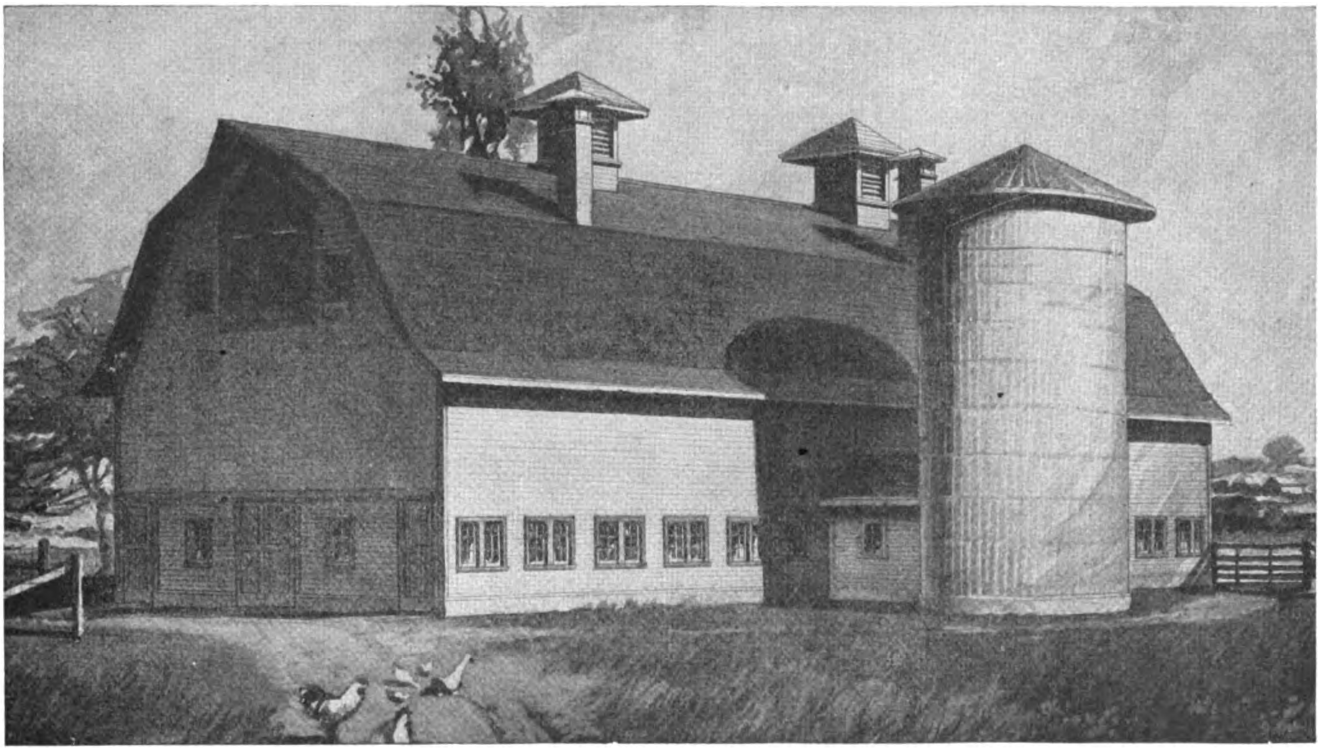
Where horses and cows are stabled together under the same roof, it is customary to run a partition to the ceiling, dividing the stable. These plans provide for a partition of this kind between the horses and cows, with doors so arranged that litter carriers and manure carriers may pass thru to any part of the stable.

There is a center driveway, 7 feet wide, between the mangers, for delivering feed, either to the mangers or feed bins. Even with litter carriers, it is a great labor saver when a load of feed may be driven directly to the spot where it is to be used. This same driveway comes in handy at times for loading roughage from the storage above, to be hauled out to the feed lots or for use in other stables.

It will be noticed that this form of roof makes a great mow. For all sizes, this barn is kept at 38 feet, which is the most practical width. It costs too much to make the roof of a barn very wide, because the framing construction all through must be made much heavier, but there is no law against stretching a barn like this lengthwise as far as material will reach.



Cross section through "any length" barn, Design A233L, showing method of construction. This makes a strong, inexpensive roof of big capacity. No timbers heavier than 2-inch planks required—all regular stock material.



OUR POPULAR "ANY LENGTH" BARN

A favorite type of barn, 38 feet wide, and can be built any length the farmer requires. The floor plans illustrated on the opposite page, show recommended arrangements for five popular lengths, namely: 112 feet, 96 feet, 80 feet, 64 feet, and 48 feet. Above, we show a cross section view through this barn, showing how it is constructed. It has a strong self-supporting plank-frame roof; everything clear inside. We can furnish complete set of blue-printed working plans and typewritten specifications for this barn in any of the lengths illustrated at the very moderate prices quoted under each plan. When ordering, ask for Design No. A233L and mention length wanted.

Plank Frame Barn Construction

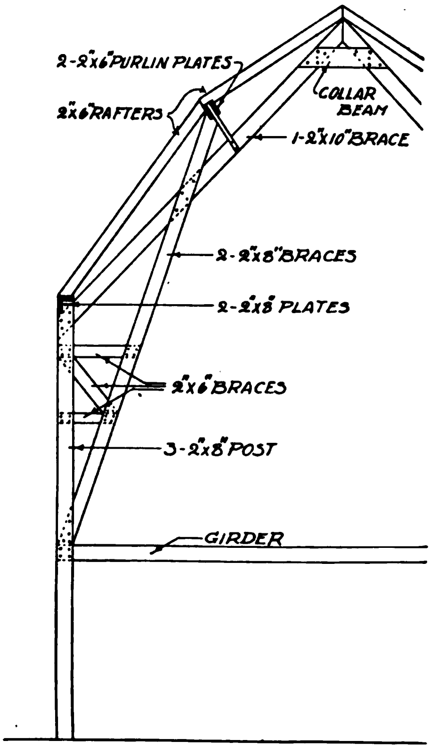
Because of the difficulty in getting dimension barn timbers the right size and length. plank frame construction, wherein nothing thicker than 2-inch planks are used, has gained in popularity very much in the last few years.

Plank frame construction is cheaper in material, since it uses timber carried regularly in stock at all lumber yards, and in labor, which, of course, is a great consideration in building. There is another advantage in plank frame construction, by the ease in which the building may be braced, also where two pieces of 2-inch wood are spiked together to make the necessary strength, the grain is more or less crossed because it generally runs in slightly different directions in each of the pieces. Also the skill required to frame long barn timbers on the mortise and tennon plan is expensive. On the other hand, it is easy to put the different planks together properly to make a very rigid structure.

With one or two skilled carpenters on a job of this kind, the others may be handy men to work under instructions. Another advantage is the open center that may be secured by the plank frame system of bracing. Very often the mowing capacity is almost the full size of the upper structure, because the braces take up very little space. A well designed plank frame roof is perfectly strong and rigid without any cross bracing whatever; so that a horse fork has a clear sweep from one end of the barn to the other, without obstruction.

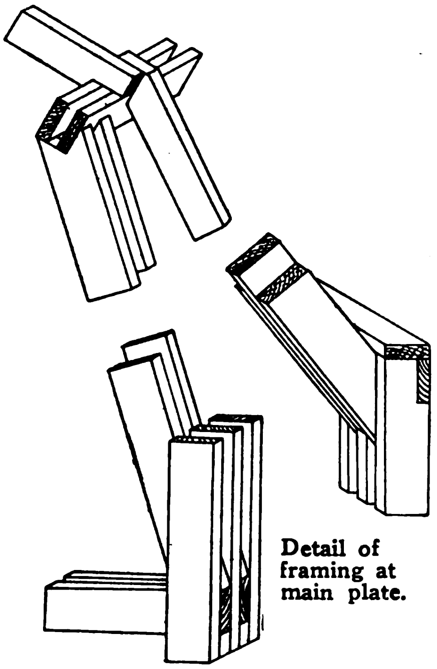
Most farmers like to have a concrete foundation under a valuable barn; and in that respect, of course, a plank frame design does not differ from a heavy timber frame.

For girders, it is customary to spike together enough planks to make them the necessary size and strength. In this construction, the man works from the bottom up, in the most natural way. Girders and joists are put in place and the floor is laid. Sometimes a temporary floor of loose boards is laid down first; but that is optional with the builders.



Detail of inside bent in self-supporting plank frame construction.

A derrick consisting of two poles, arranged like a hay-fork hoist, is very convenient for lifting planks and working them into place, on the same principle that steel beam buildings are constructed in the city. With a derrick of this kind, the work proceeds without any heavy lifting and without danger to the workmen, provided, of course, that the derrick and tackle are sufficiently strong for the work.



Detail of framing at main plate.

Details of joints at sill and at purlin plate.

Safety first is just as necessary in barn raising as in picking apples from a high tree. It is better to prevent a fall than to nurse a broken leg. A good, heavy, steady horse on a derrick rig of this kind is often worth more than one or two extra men.

The style of barn construction is practical, but it is doing away with the old-fashioned picturesque barn-raising bees, because two or three men can work to better advantage than more.

Get figures and prices for material for this type of barn from your lumber dealer. You know the size of barn you need and he can do the rest.

If any of your neighbors are figuring on building, tell them about this book—it might help them to build better and more cheaply.

Rotation of Crops

Proper rotation is absolutely necessary to maintain the fertility of the soil.

Farmers who do not rotate are not farming. They are digging natural fertility from the soil and selling it. They are preparing an abandoned farm for the next generation.

The right kind of rotation varies with the soil, climate, rainfall and man behind the plow. A rotation that suits one farm or one farmer would not work out properly with another. There is no hard and fast rule to apply to rotation in framing, but some system should be adopted and followed year after year. Each farmer must work out the problem for himself. His State university or experiment station will help him, and if asked to do so will give valuable assistance.

The local lumber dealer can give a great deal of information about fertilizers.

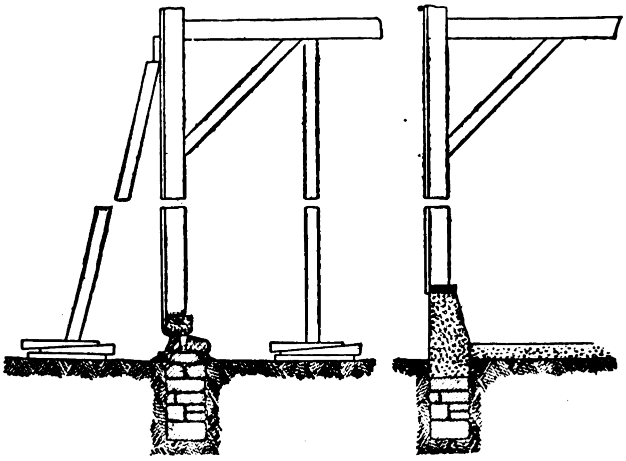
Repairing Rotted Post Foundation

Farm sheds often are supported on posts without sills. These posts sometimes are blocked up with loose stones. Manure gets piled around and the bottom of the post in time rots away.

The illustration shows how such posts may be jacked up, sawed off to where the timber is sound and supported by a good, solid concrete base. A jack screw or two would be a great convenience, but as farm sheds are usually not very heavy, the elevating may be done by using a timber pry over a bait. When the work is done, the shed is in a better condition so far as under-pinning than when new.

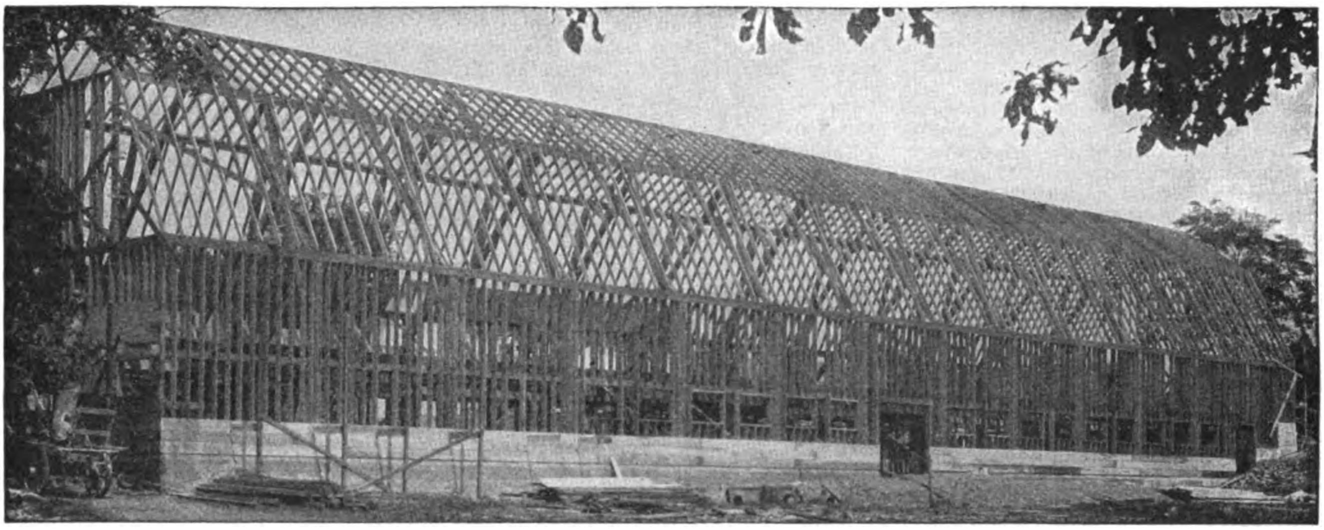
In a barn or shed with sills that have rotted away, it is better to take the sill right out and build a concrete wall up to the proper heighth to take its place. While the concrete is soft, imbed a 4 by 6 to nail the boarding to.

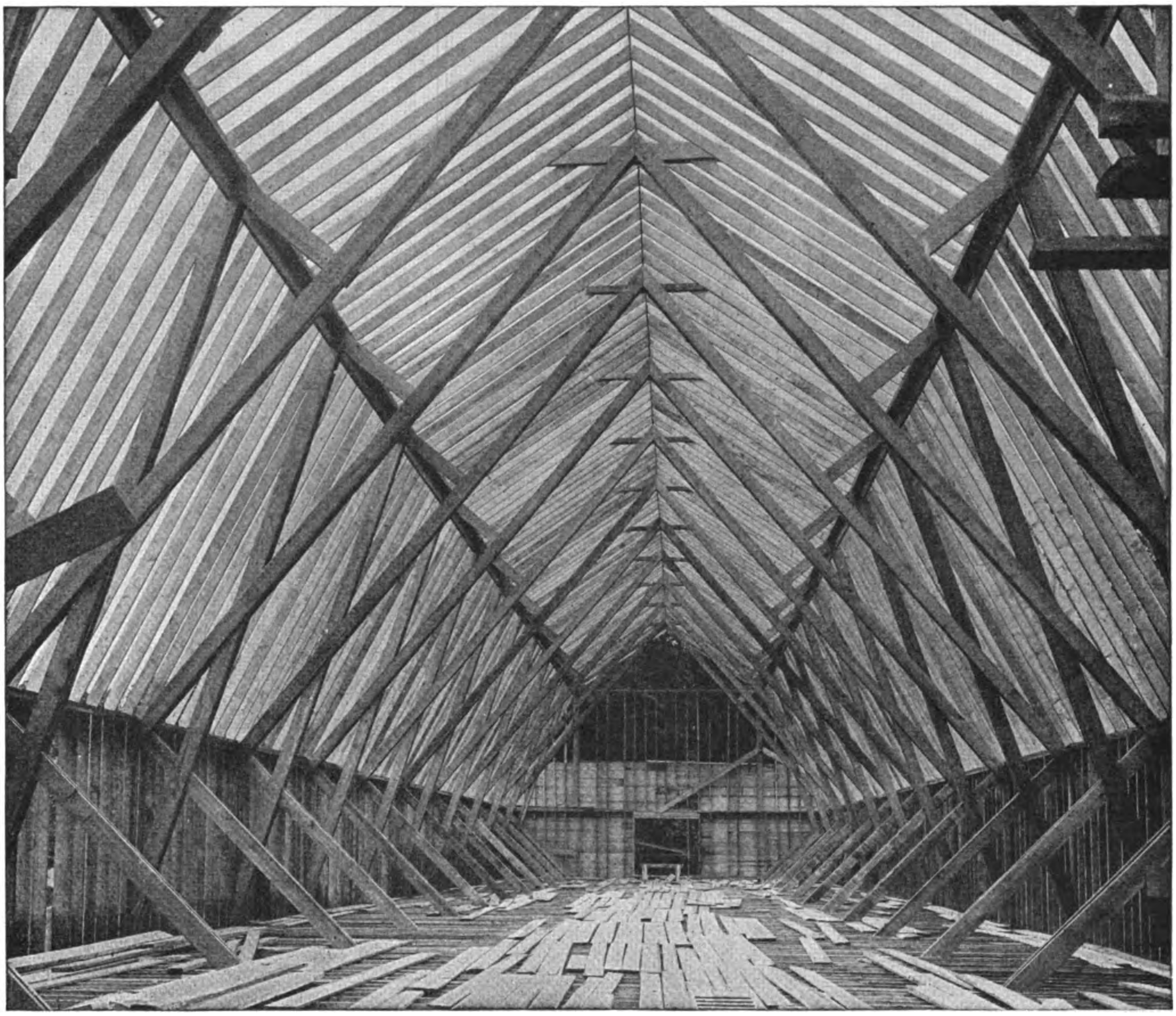
Not many years ago the rural school teacher educated the boys and girls away from the farm, but that sentiment has changed. Now, many rural schools are teaching better farming.



Method of Replacing Crumbled Foundations with Concrete.

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.





Another Type of Plank Frame Construction Self-Supporting Roof. A Truss is Placed Every 12 feet, Membering at Four Points—Sill, Plate, Purlin and Ridge. Extra Bracing from the Sill out onto the Barn Floor is a Special Feature Giving Extra Strength. Notice Also How Purlin Plate is Built Up out of Two Timbers Laid Together at Right-Angles.

General Barn with Bridge Design A146L

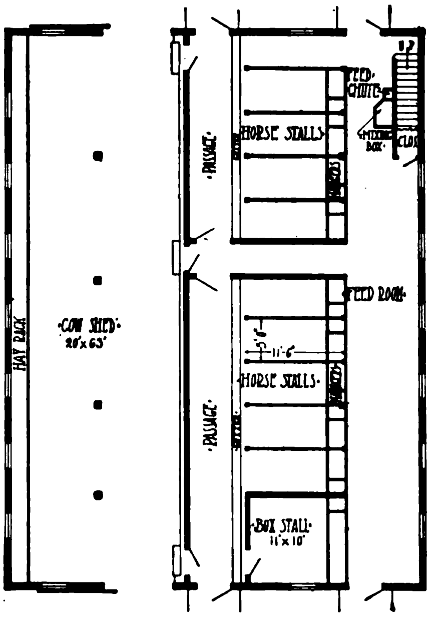
A style of barn that is very much used is shown in plan A146L. A peculiarity of this style of barn is what is commonly termed a double threshing floor. In some of the larger ones the threshing machine is set first on one side and then on the other, for convenience in getting the grain to the machine. The bridge from the bank to the second floor must be stronger than common barn bridges, because it spans the space between the barn and the bank and it leaves a runway for cattle along the bank side of the building.

In this plan the cows have no stalls, but are stabled in an enclosed shed with a feeding rack the whole length of the side, so arranged that it may be filled from the mow above. Several removable racks for feeding grain may be placed anywhere in this shed, and a water trough with an everlasting supply of good pure water will hardly freeze in here.

There are many points of convenience about a barn built after this plan, one of which is the facility for getting all around it. Gates, fences and retaining walls for the bank offer opportunities for stock pens in almost every corner without interference with the barn proper. The entrance to the barn being overhead, the whole ground space around the barn is left free to handle stock. Horses, cows, sheep and hogs may all have different quarters and be kept separate, very much to the advantage of the stock and at a great saving of time. The dampness, which is a bad feature of moist bank barns, is obviated in this plan because there is a circulation of air all around.

Dry Farming

Considerable interest has developed in the last twenty years in what is generally termed "dry farming." The name is a misnomer. There is no such thing as dry farming. No plant of value will grow without moisture.



Ground Floor Plan, Barn A146L.

The so-called dry farming crops are grown where the rainfall is less than 20 inches per annum. In some sections it has been possible to grow a crop each year on a rainfall of 20 inches by farming in such a way as to prevent evaporation from the soil.

Improved methods and special machinery have done a great deal towards developing this kind of farming. Those engaged in it, however, are working close to the border line and are running the risk of extra dry seasons, when the small variation of rainfall is felt severely.

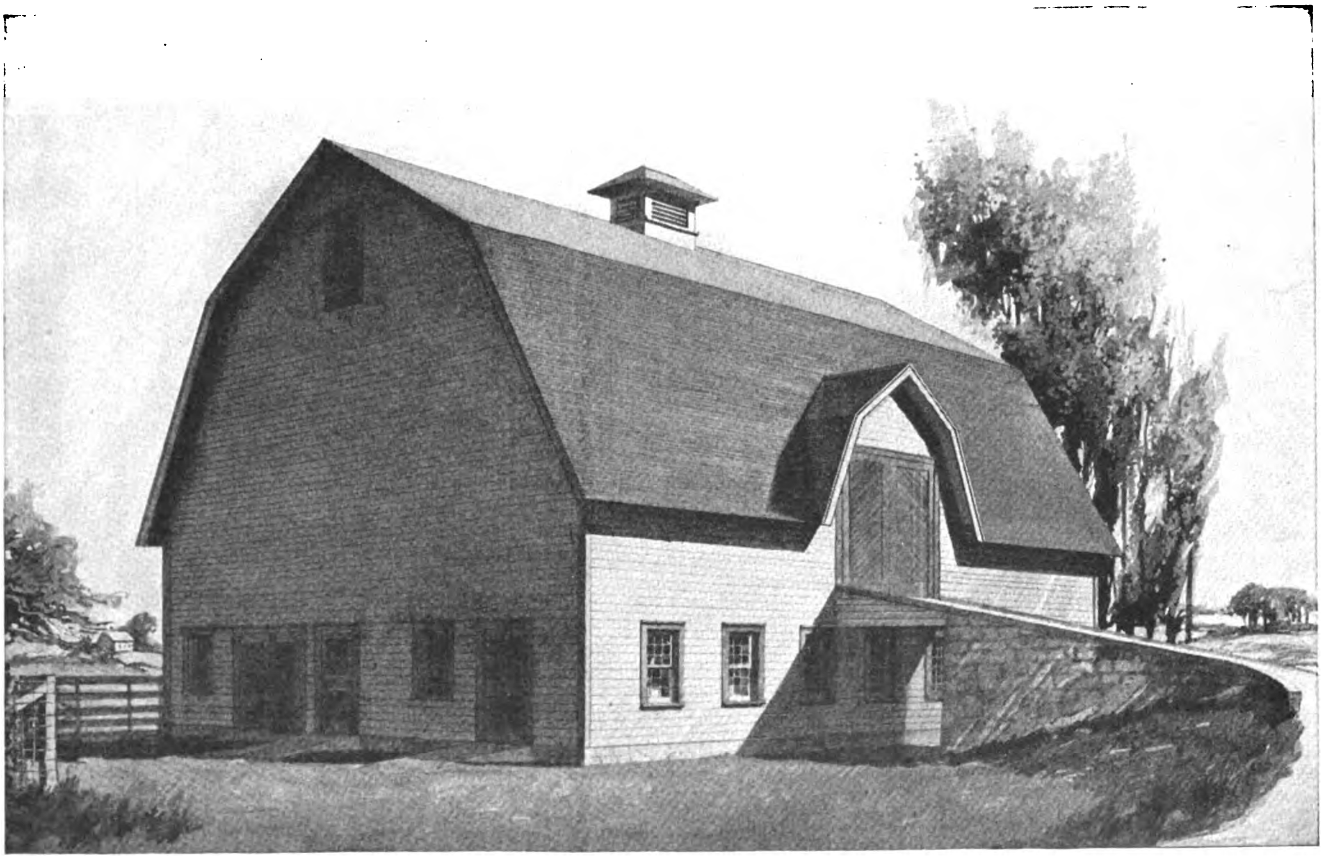
In some dry farming sections it is possible to raise a crop of grain only once in two years. Cultivation is kept up during certain parts of both years by systematically breaking the crust after each shower, so that the fine earth on top prevents evaporation.

Durum wheat is one of the crops that has helped out the dry framing proposition, because durum wheat can be grown profitably with less moisture than any other wheat, and there is a demand for this particular kind of wheat for mixing purposes.

Protecting Quail

Government experts have figured that one Bob White is worth $20 to a farmer, because of the grubs and insects the quail destroys.

Unfortunately, for some parts of the country the quail are still regarded as game birds, and are killed in large numbers by "game hogs," principally the beef-necked fellows from town.



GENERAL FARM BARN WITH BRIDGE TO MOW FLOOR

A businesslike barn, measuring 48 by 64 feet. Contains shed for loose cattle, besides stalls for 10 horses on the ground floor. Mows under gambrel roof are of great capacity. We can furnish complete set of blue-printed working plans and typewriten specifications for only $6.00 per set. When ordering, ask for Design No. A146L.

A SILO for every FARM

Silage, and Value of Silos for Farm Stock

Feed silage!

If you have no silo, build one. If you have one, build another.

Build silos and keep them in first-class, air-tight condition. Then make good silage and feed it to good stock. Business conducted in that way will soon pay back the first cost and make a handsome profit every year.

Silage is canned corn.

It is preserved on the same principle that the farmer's wife keeps summer fruits in air-tight jars for winter use. She must have air-tight bottles or the fruit spoils. A man must be just as particular with his silo. The fruit must be clean and good, properly ripened, and canned at the right moment. Making silage is just as particular. One farmer has silage that the cattle bawl for, while his neighbor's cows are picking over musty stuff.

Good silage, properly fed to well-bred stock in a sanitary stable, is profitable every time. The silo preserves the whole product of the corn crop except the roots and stubble. It contains the juices and the flavoring oils which add the appetizing quality known to feeders as palatability. Beef cattle and milch cows like it, and say so by their actions in willingly forsaking good pasture when offered a feed of silage in summer. They improve in flesh and milk flow when given silage even in summer. This is a new recommendation for silage. Heretofore, its popularity was based upon its superiority as winter feed.

When green corn is chopped fine and forced by the air blast over the top and down into the silo, it is chopped corn or corn salad. In a few hours' time, fermentation commences, which causes development of heat. This heating process cooks and ripens the corn hash and makes it into a homogeneous mass called silage. During the change, it is partially digested, something after the manner of ripening cheese. This is caused by the activities of certain kinds of bacteria. Some kinds of bacteria develop pleasant flavors, other kinds develop moulds and bad flavors. Some are friends and some are enemies.

To encourage friendly bacteria, the silage must be made when the corn is just right and put into an air-tight silo that is right in every way. This plan furnishes conditions best intended for the activities of flavor-producing bacteria.

The fermentation is caused by micro-organisms which convert part of the sugar into acetic acid. About one and one-half per cent of the entire corn plant is sugar. It is the sugar and acetic acid that preserve the silage in good condition for feeding.

Value of Silos in Saving the Corn Crop

When the ears of corn are left on the stalks to ripen, the bleaching process soon robs the leaves and stalks of the greater part of the nutrition that formerly belonged to them, so that about the only real value of the corn plant over the roughage is in the kernels. Roughly estimated, the gain is about one-half of the real feeding value of the corn plant when both grain and stalks are handled to the best advantage.

When corn is ripened and husked, the stalks are not handled to the best advantage; they are mostly wasted. Estimating a loss of 10 per cent in passing the whole of the corn plant, including the ears, through the silo, we still have a saving of 40 per cent in silage over and beyond the value of the corn for feeding purposes when preserved in any other way.

When corn is left to mature on the stalks, the cost of husking and housing the ear corn is about equal to the cost of putting the green corn into the silo. The cost of feeding silage is not much different from the cost of feeding ear corn. Furthermore, the waste in feeding silage is less than the waste in feeding ear corn.

It is not practical to silo all the corn raised on the farm. Nine or ten acres of good corn will fill a fair sized silo. Very few farmers in the corn belt feel that they are doing business unless they plant several times this amount.

The lumberman is posted on silos and he will take pains to furnish all the information necessary. And he can supply the materials for the silo.

What Size Silo is Best?

In these days of progress no farm is complete without a silo.

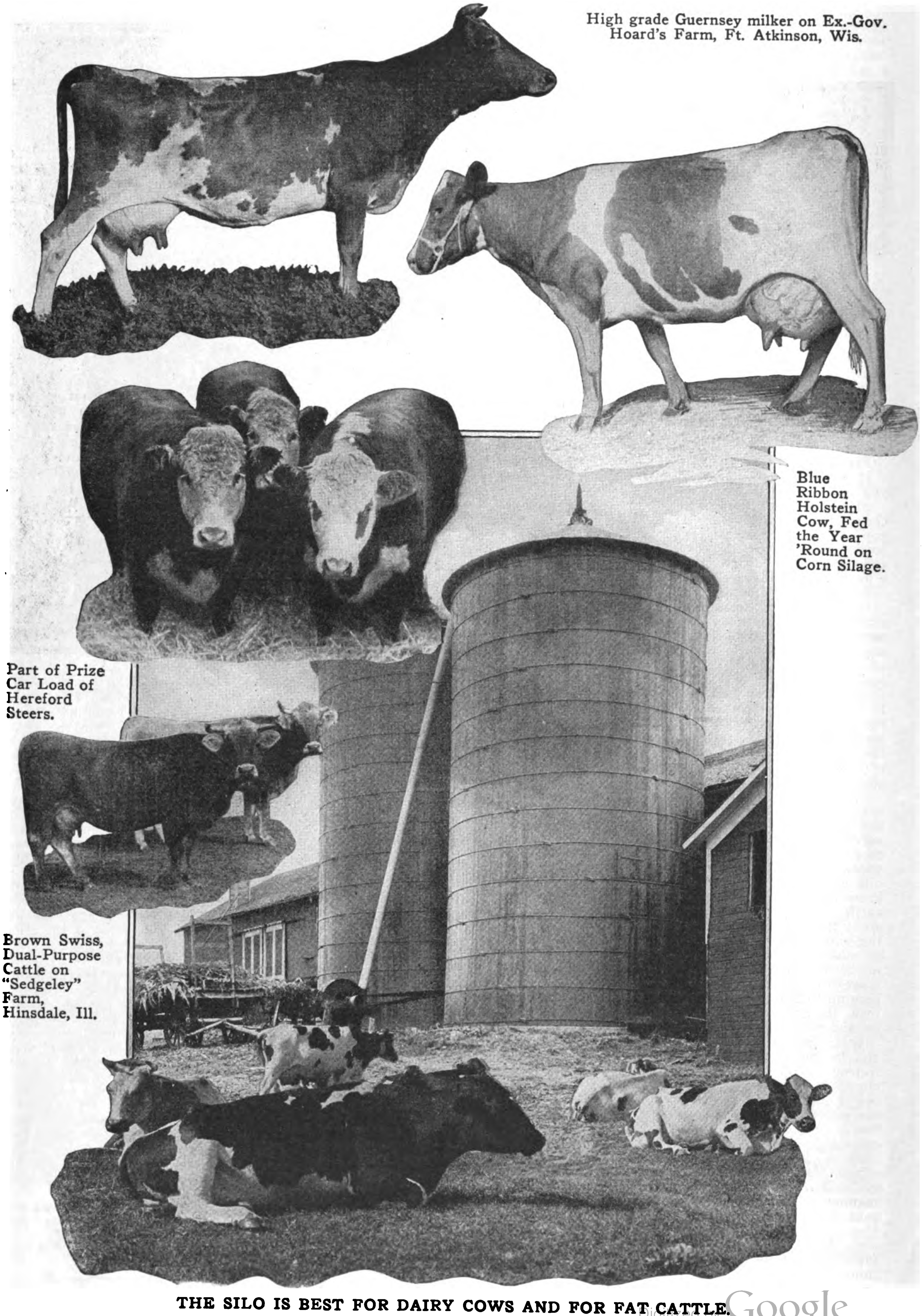
The size of the silo must match up with the amount of silage required each day during the feeding season because enough must be fed each day to keep it fresh. The silage should be lowered evenly across, not less than four inches in depth in the silo per day.

Twelve feet in diameter and 32 feet high is about as small as silos are built. It is better to have two small ones than one large one. A silo 12 feet in diameter and 32 feet high will hold about 100 tons of silage.

In feeding silage to dairy cows estimate 35 or 40 pounds per day for each cow.

Silage is good for cows, sheep, horses, hogs and chickens.

Corn cut when the kernels are



High grade Guernsey milker on Ex.-Gov. Hoard's Farm, Ft. Atkinson, Wis.

Blue Ribbon Holstein Cow, Fed the Year 'Round on Corn Silage.

Part of Prize Car Load of Hereford Steers.

Brown Swiss, Dual-Purpose Cattle on "Sedgeley" Farm, Hinsdale, Ill.

THE SILO IS BEST FOR DAIRY COWS AND FOR FAT CATTLE.

glazed and put immediately into the silo, will feed out about 90 per cent. Every other means of saving the corn crop in comparison is terribly wasteful.

Small wooden silos are comparatively cheap, and if rightly constructed are as good as any. If a farmer understands the business of building silos, and if he understands their use and has the stock to feed, he can put considerable expense into silos, and make the money bring him good interest on the investment. If he has no experience it is better to start with a small silo, with the expectation of building a larger one next year.

Cost of Growing and Making Silage

Conditions vary so much in different parts of the country that it is impossible to give a correct idea of the actual cost of growing a crop of corn for silage, but taking as a basis the reports from different states, the following figures may be taken as a sort of average to base one's calculations on:

Use of land	$ 5.00
Plowing	2.00
Harrowing	1.00
Planting	.50
Seed	.25
Cultivating	1.25
Total	$10.00

This brings the total cost of an acre of corn up to $10.00. Such a thing as an average tonnage per acre is almost impossible to estimate, because the yields vary all the way from 10 to 30 tons per acre. The middle between these extremes would be 20 tons, which would make the cost of a ton of silage corn 50 cents at cutting time.

For the purpose of getting the figures down within the reach of any good farmer, we will call it 15 tons per acre, or 30,000 pounds. This would furnish feed for one steer for 1,000 days' feeding at the rate of 30 pounds per day. One thousand days' feeding from a 15-ton crop would be 1 cent per day. It is then necessary to add the cost of cutting the corn and putting it into the silo, which is figured at 64 cents per ton, or a little less than 1 cent per day for 30 pounds of silage that the steer eats, thus making the total of, say, 2 cents per day for the silage ration for one steer.

The silage ration will furnish two-thirds of the maintenance of the steer, the other third will be made up of grain and other roughage supplied by way of variety.

Cost of Filling the Silo

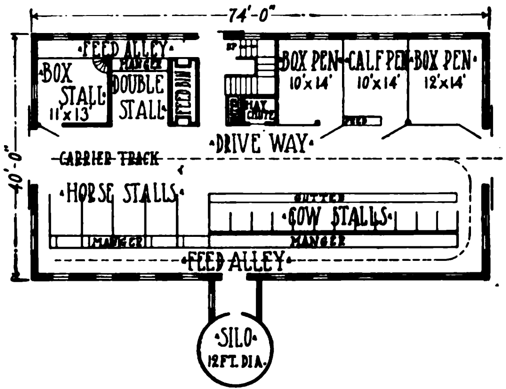
Figuring time of men at 15 cents an hour and the same for a pair of horses, and $4.50 for an engine, including the engineer, and gasoline at 13 cents a gallon, by a series of extended experiments it cost an average of 64 cents per ton to take corn from the field and run it through the chopper and pack it into the silos. This average was taken from figures made on the ground while examining the work on thirty-one farms.

The cost varied on the different farms from 46 cents a ton to 86 cents a ton. The difference was accounted for by long or short hauls and general convenience, but more particularly by having the working force properly balanced, which really means efficient head work.

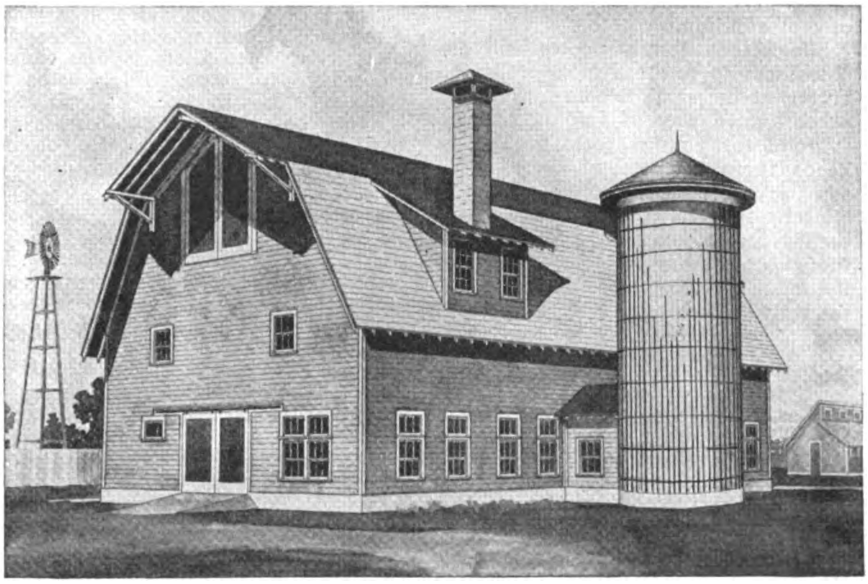
Some farmers actually paid a premium of 100 per cent for poor management.

To Figure Silo Capacity for Various Size Silos

In a deep silo, it packs closer and weighs more to the cubic foot. There is an economical value in building deep silos and there is no corresponding disadvantage. The same foundation and the same roof covers the additional height. The additional cost of elevating cut corn from the hopper is not very great. When the



Ground Floor Plan of Barn A252L



SPECIALLY DESIGNED BARN FOR FANCY STOCK

74 by 40-foot gambrel roof barn with special accommodations for twelve cows and six horses. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design A252L.

Special Barn for a Small Farm —Design A252L

This plan shows a barn 40 feet wide and 74 feet long, designed for special operations where fancy stock is bred and cared for by the owner.

Some farmers have a special ability in the breeding line. Their animals are recognized as being a little better than others of the same breed. Such men want especial accommodations for their high-priced animals, where they can visit them any time of the day or night. They want the best silage, the best hay, the best grain, the best of everything, and the chances are, they want a man to sleep in the building right with the animals. They want box stalls and open stalls. They want feed bins and they want all the modern conveniences that go to make up a first-class stable. On top of all the rest, they want a building that looks in keeping with the importance of the business they are engaged in.

If each breeder of live stock could thoroughly understand the value of improved stock to the country, these breeders would appreciate their work more than they do. When a man breeds an animal that will make a hundred pounds of beef more with the same amount of feed, he is making two blades of grass grow where one grew before, ony he is doing it by proxy.

And he is elevating his neighbors towards the eminence which he occupies in the production of better live stock.

There is a wide driveway in the center of this barn with open stalls for cows and for horses on one side, and box stalls with many barn conveniences on the other side. Altogether it is a special plan that will appeal to men having ideas of their own in regard to breeding, feeding and handling live stock.

Approximate Capacity of Round Silos, in Tons

Diameter is shown at top of column, and depth at left.

Height of Silo	Inside Diameter of Silo, in Feet, and Capacity in Tons (2,000 lbs.)										
	10 ft.	11 ft.	12 ft.	13 ft.	14 ft.	15 ft.	16 ft.	17 ft.	18 ft.	19 ft.	20 ft.
Feet	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons	Tons
20	26										
21	28										
22	30	36									
23	32	39									
24	34	41	49								
25	36	43	52								
26	38	46	55	64							
27	40	49	58	68							
28	42	51	61	71	83						
29	44	54	64	75	87						
30	47	56	67	79	91	105					
31	49	58	70	83	96	110					
32	51	62	74	86	100	115	131				
33	53	65	77	90	105	121	138				
34	56	68	80	94	109	126	143	162			
35	58	70	84	98	114	132	149	169			
36	61	73	87	102	118	136	155	176	196		
37	63	76	90	106	123	142	161	183	204		
38	66	79	94	110	128	148	167	191	212	237	
39	68	82	97	115	133	154	174	198	221	247	
40	70	85	101	119	138	160	180	205	229	256	280
41	72	88	105	124	143	166	187	211	236	262	291
42	74	91	109	128	148	172	193	218	244	270	300
43			113	133	154	179	201	225	252	280	310
44			117	137	159	184	207	233	261	289	320
45					165	191	215	240	269	298	330
46					170	197	222	247	277	307	340
47							229	254	285	316	350
48							236	261	293	325	361
49									301	334	371
50									310	344	382

Add 5 feet to height indicated, to allow for settling of silage.

blower is used, the corn goes in, in a hurry, no matter what the height of the silo may be.

Number of Cows for One Silo

Taking one farming condition with another, it seems necessary to have at least ten head of cows to make sufficient business for silo feeding. After the silo is built and the farmer realizes its value for feeding purposes, and the ease with which the farm live stock is provided with roughage, he generally starts out to buy more cows. This is one reason why silage is so very profitable. Too many farmers get along with five or six head of cows, when twenty head should be kept. Farmers are wary about keeping more stock than they can feed. Most farmers have had experiences in buying high-priced feed to carry them through the winter; it makes them careful. It requires about one month's feeding with silage to appreciate its possibilities.

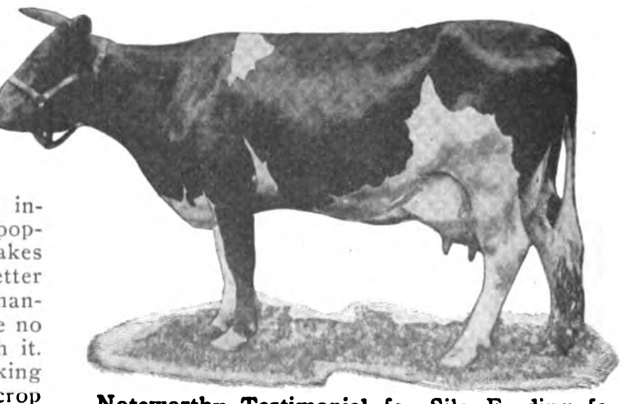
The following table gives the amount of silage necessary for different sized herds of cattle. It also gives the amounts to feed daily, together with the acreage of land necessary to grow the corn to fill it.

Number of cows	Silage for 180 days at 30 lbs. per day	Acres of corn at 15 tons per acre	SIZE OF SILO	
			Inside diameter	Depth of silage
	Tons	Acres	Feet	Feet
14	38	2 to 3	10	26
15	40	3 to 3½	10	28
20	54	3 to 4	12	26
25	68	4½ to 5	14	26
30	81	5 to 6	14	28
35	95	6 to 7	16	26
40	108	7 to 8	16	28
45	122	8 to 9	18	26
50	136	9 to 10	20	26

The Amount of Silage to Feed

It depends a good deal on the age of an animal and the purpose for which it is kept, to determine the amount of silage needed per day for the most economical feeding. With breeding stock it is better to have more roughage and less grain, while milch cows should have about all they can assimilate of both. The ration for fattening stock is different from either, because in this case the greatest possible gains are wanted within reasonable cost. Silage helps the animals to lay on fat, and it will produce weight cheaper than any other feed, but it needs something a little more oily in addition.

Silage fed to milch cows will enable them to produce more milk and butter, at the same expense, than any other known way of feeding. Silage is good for young stock, because it keeps them thrifty and there is no setback in the winter. Silage is the least wasteful, the cheapest and the most successful way of handling a corn crop that has ever been discovered. Silage increases the live stock population of a farm, makes more manure and better manure that is easier handled, because there are no long stalks mixed with it. A silo provides for taking care of the corn crop when the weather is good and it forms the best roughage for balanced rations that a farmer can possibly provide.



Noteworthy Testimonial for Silo Feeding for Dairy Cattle—Holstein Cow, "Banostine Belle de Kol," for three years prior to June, 1914, holder of the world's record for butter fat production. In 365 days she gave 27,404.4 pounds of 3.86 per cent milk, totaling 1,058.34 pounds of butter fat.

guide to the amount of silage required by different farm animals:

Daily Ration of Silage for Farm Stock

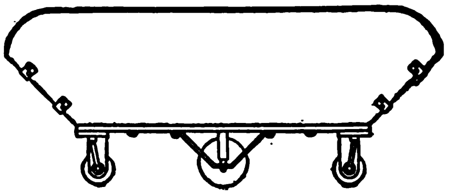
	Pounds Daily
Sheep, for fattening	3 to 4
Lambs, for fattening	2 to 3
Sheep, for breeding	3 to 5
Dairy Cows	30 to 50
Beef cattle, young, for fattening	10 to 30
Wintering beef cows	30 to 50
Wintering calves	15 to 25

Note: These amounts are approximate and must be varied according to the weights of the animals and the other kinds of feed given to make up the complete ration.

Silage and alfalfa hay with the addition of a little straw, by way of variety, make a complete ration for wintering breeding stock. In some parts of California alfalfa hay and straw from the thresher are stacked together in layers. Young stock and breeding cows eat the one as readily as the other.

Truck or Car for Wheeling Silage

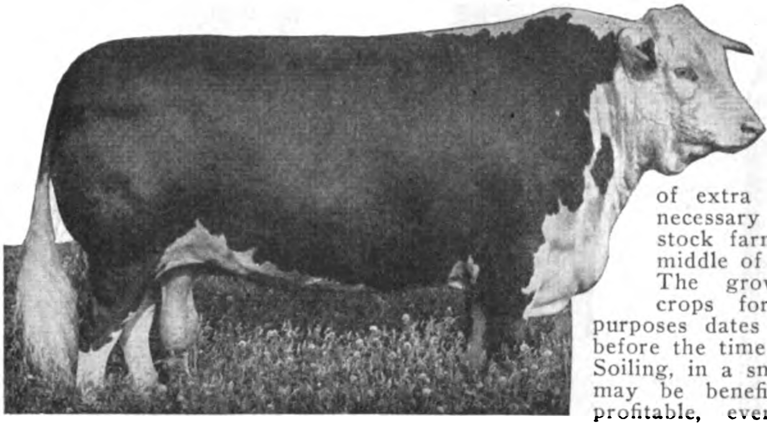
For carrying silage from the silo to the mangers, a truck of this style is very convenient. The sloping ends accommodate the scoop shovel, and the sides are high enough to hold quite a load. The size of the car depends on the amount of silage fed, also the condition of the floor over which it is to run. The two wheels in the center carry the load. The casters at the ends are simply to prevent either end from dropping when the car is at rest. Such trucks are manufactured and sold at lumber yards, or they may be made by the local carpenter and blacksmith.



Silage Truck

Watering the Silo

Some of our best dairy men make a practice of putting water in the silo after it has been filled. Water causes the silage to settle, which helps to pack it close to keep the air out. Twenty barrels to thirty barrels are used, according to the size of the silo. Some blower attachments will



Beef Cattle Relish Silage and it cheaply fits them for market. This champion Hereford Bull lives largely out of the Silo.

elevate the water the same as the silage. In fact, a good way is to turn a trickle of water into the blower to go up right with the silage at the time of filling the silo.

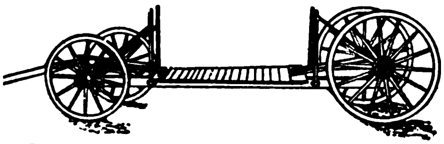
Soiling Crops

Every year, in August, pastures take a rest, There may be a drought to emphasize this peculiarity of pasture grasses; at any rate, some kinds of extra feed are necessary on the stock farm in the middle of summer. The growing of crops for soiling purposes dates back to before the time of silos. Soiling, in a small way, may be beneficial and profitable, even where silage is fed the year around. But owing to extra labor and the small returns from the land, the profit from this kind of feeding is not usually very satisfactory. In figuring dollars and cents, however, farmers do not always take into consideration the value of a change in feeding.

The farm stock does better with a variety. But the value of a change is not so easily established. It is generally noticed that a change produces an increased milk flow when given to dairy cows when the new food corresponds in nutrition to the food value that has been displaced. On the other hand, there is the labor of cutting and hauling the soiling crops. A little of this kind of exercise is a good thing to call attention to the ease with which modern machinery puts corn into the silo.

Low Down Silage Rack

An under-slung rack for carrying corn from the field to the silage cutter is shown in the drawing. The wagon is coupled out long and the rear end of the rack is hung by bolts, or iron straps, from the hind axle.



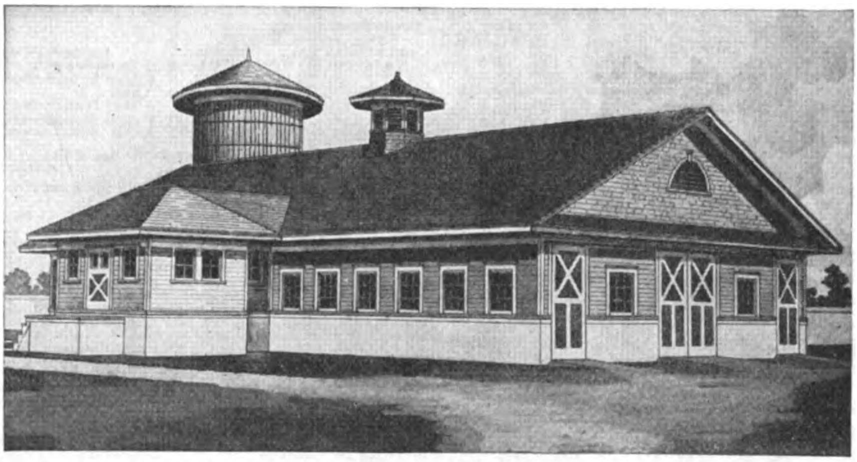
Low Down Rack for Hauling Fodder Corn.

There is one timber in the center which answers for the reach and the side timbers extend forward from near the hubs of the hind wheels to join the center reach stick in front. This taper is for the purpose of cramping.

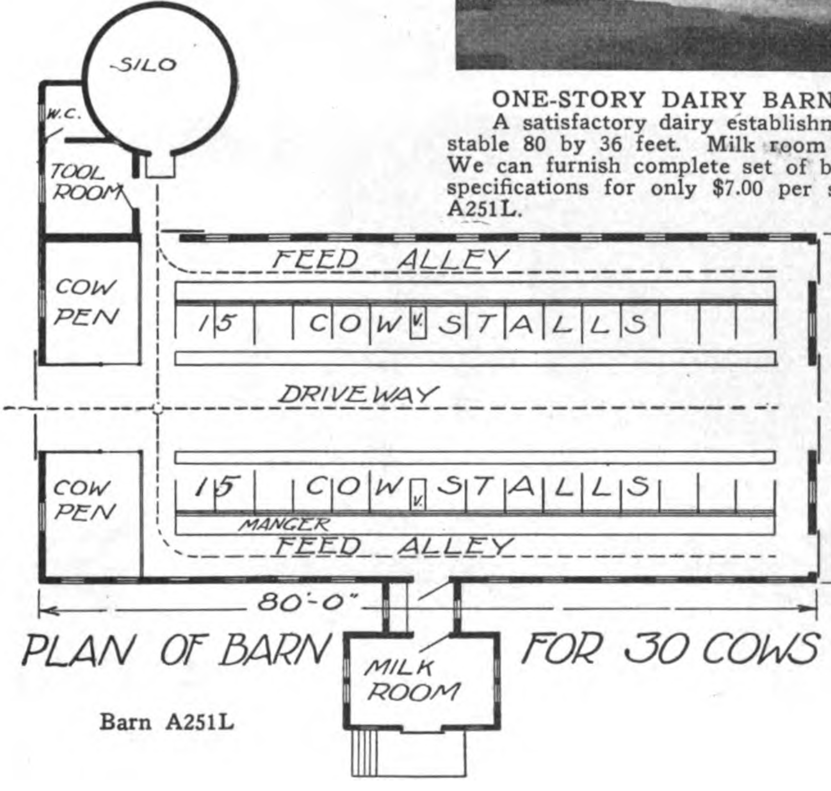
Thirty Cow One-Story Barn—Design A251L

A stable 80 by 36 feet, not counting the milk room, silo and tool room, is shown in this design.

Thirty cows make a good income when they are housed in a building like this. With a dairy herd of thirty good cows in a light, airy stable, a man fels like making each cow turn a net profit of $100 per year, and he is more than likely to do it. $3,000 is very interesting, especially when it comes from only one branch of the farm business.



ONE-STORY DAIRY BARN WITH SILO AND MILK ROOM.
A satisfactory dairy establishment for a herd of 30 cows. Size of main stable 80 by 36 feet. Milk room is entirely separate from the cow stable. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A251L.



PLAN OF BARN FOR 30 COWS

Barn A251L

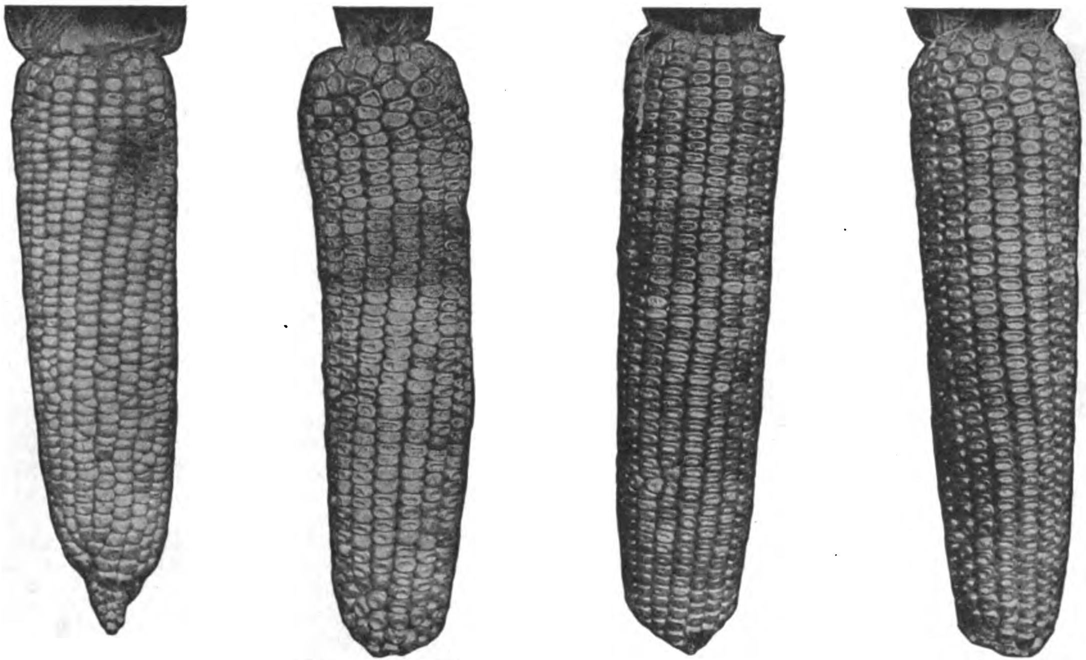
In this plan the cows are headed out, and there is a driveway through the center of the manure spreader, so the manure from the gutters may be loaded and hauled to the field with only one handling. The bedding is brought in by the wagon load through the same channel. Even when the storage barn is handy, a wagon is often used for this purpose. If either of the box cow pens are not in use the extra bedding is pitched in there until wanted.

There is an over-head track which runs to the silo to fetch and carry silage at feeding time. The same track is supposed to run to the storage barn for alfalfa hay or other roughage.

Visitor—What do you do with so much fruit?

Farmer—We eat what we can, and we can what we can't.

WE can furnish complete blue-prints for any building illustrated in this book. See under each picture for low price of blue prints.



No. 1 Soft-Dough Stage No. 2 Half the Kernels Dented No. 3 Nearly all Dented No. 4 All Kernels Dented
The Best Time to Harvest Silage—Corn for the silo should be as ripe as ears 3 and 4, provided leaves are still green.

When to Cut the Ensilage

WATER AND DRY MATTER IN CORN AT DIFFERENT PERIODS.

Date of cutting	Stage of growth	Corn per acre	Water per acre	Dry Matter per acre
July 30	—Fully tasseled...	9.0	11.2	.8
Aug. 9	—Fully silked.....	12.9	11.3	1.5
Aug. 21	—Kernels watery to full milk............	16.3	14.0	2.3
Sept. 7	—Kernels glazing .	16.1	12.5	3.6
Sept. 23	—Ripe............	14.2	10.2	4.0

In the last column is shown the dry matter per acre in corn at different stages. When the corn is fully tasseled, it contains but eight-tenths of a ton of dry matter per acre, or only one-fifth what it contains when fully ripe. When in the milk it contains nearly three times as much dry matter as when fully tasseled. Only seventeen days were occupied in passing from the milk to the glazing stage, yet in this time there was an increase in the dry matter of 1.3 tons per acre. This shows the great advantage of letting the corn stand until the kernels are glazed.

To have the silage keep well, the corn must be cut at the proper stage of maturity. If not sufficiently matured, too much acid develops. If too ripe, it does not settle properly and the air is not sufficiently excluded to prevent spoiling.

Corn should not be cut until the ears are out of the milk and most of the kernels glazed and hard. In the photo, ear No. 1 is in the soft dough stage; No. 2 is beginning to dent; No. 3 is nearly all dented, but a few kernels are still in the milk; No. 4 shows all of the kernels dented. When corn is put into the silo it should usually be as ripe as ears Nos. 3 and 4. In case the weather has been so hot and dry that the lower leaves have fired, the corn should be cut before the ears are quite so far advanced. Much riper corn will keep good at the bottom of the silo than if put in at the top, because of the greater pressure, which excludes the air more completely. Therefore, cut the ripest corn first and place it in the bottom of the silo.

Federal Corn Grades

Grade Classification: White, Yellow and Mixed Corn,	Moisture	Damaged Corn			Maximum Percentages of—	
					Foreign Material, including dirt, cob, other grains, finely broken corn, etc.	"Cracked" corn not including finely broken corn. (See General Rule 9.)
No. 1	14.0	2	Exclusive of heat damaged or mahogany kernels		1	2
2	15.5	4			1	3
3	17.5	6			2	4
4	19.5	8	May include heat damaged or mahogany kernels not to exceed	½%	2	4
5	21.5	10		1%	3	5
6	23.0	15		3%	5	7

"Sample" See General Rule No. 6 for Sample Grade

GENERAL RULES

1. The corn in grades No. 1 to No. 5, inclusive, must be sweet.

2. White corn all grades, shall be at least 98 per cent white.

3. Yellow corn, all grades, shall be at least 95 per cent yellow.

4. Mixed corn, all grades, shall include corn of various colors not coming within the limits for color as provided for under white or yellow corn.

5. In addition to the various limits indicated, No. 6 corn may be musty, sour, and may also include corn of inferior quality, such as immature and badly blistered.

6. All corn that does not meet the requirements of either of the six numerical grades by reason of an excessive percentage of moisture, damaged kernels, foreign matter, or "cracked" corn, or corn that is hot, heat damaged, fire burnt, infested with live weevil, or otherwise of distinctly low quality, shall be classed as sample grade.

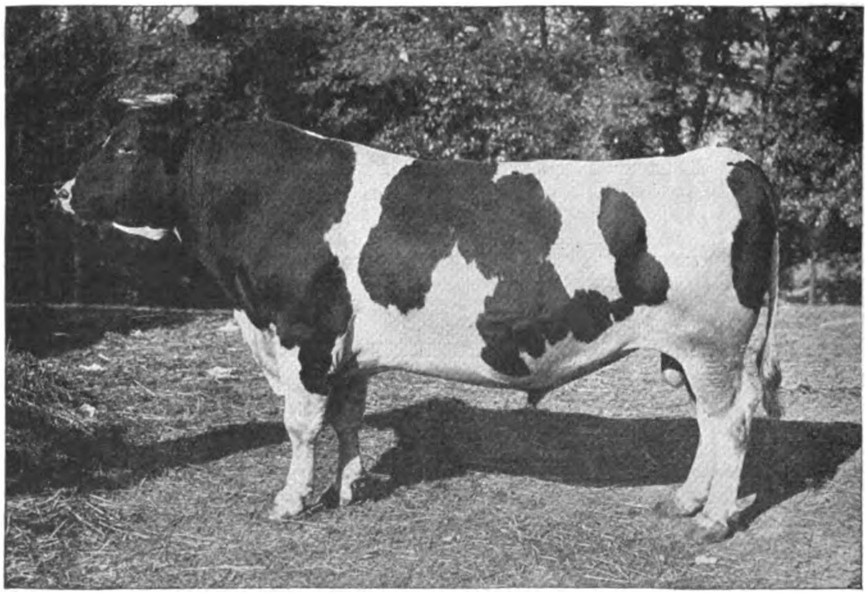
7. In No. 6 and sample grade, reasons for so grading shall be stated on the inspector's certificate.

8. Finely broken corn shall include all broken particles of corn that will pass through a perforated metal sieve with round holes nine sixty-fourths of an inch in diameter.

9. "Cracked" corn shall include all coarsely broken pieces of kernels that will pass through a perforated metal sieve with round holes one-quarter of an inch in diameter, except that the finely broken corn as provided for under Rule 8 shall not be considered as "cracked" corn.

10. It is understood that the damaged corn, the foreign material, including pieces of cob, dirt, finely broken corn, other grains, etc., and the coarsely broken, or "cracked" corn, as provided for under the various grades, shall be such as occur naturally in corn when handled under good commercial conditions.

11. Moisture percentages, as provided for in these grade specifications, shall conform to results obtained by the standard method and tested as described in Circular 72, Bureau of Plant Industry, U. S. Department of Agriculture.



Champion Holstein-Friesian Bull at the Illinois State Fair.

Combination Barn—Design A272L

This illustration shows a horse and cow barn 100 feet long by 36 feet in width.

There is a large passageway extending through the center of the barn from one end to the other. There is a solid partition across the barn between the horse department and the cattle department. On the horse side of this partition are two single doors, and one double door on a roller track which reaches clear across the barn from side to side.

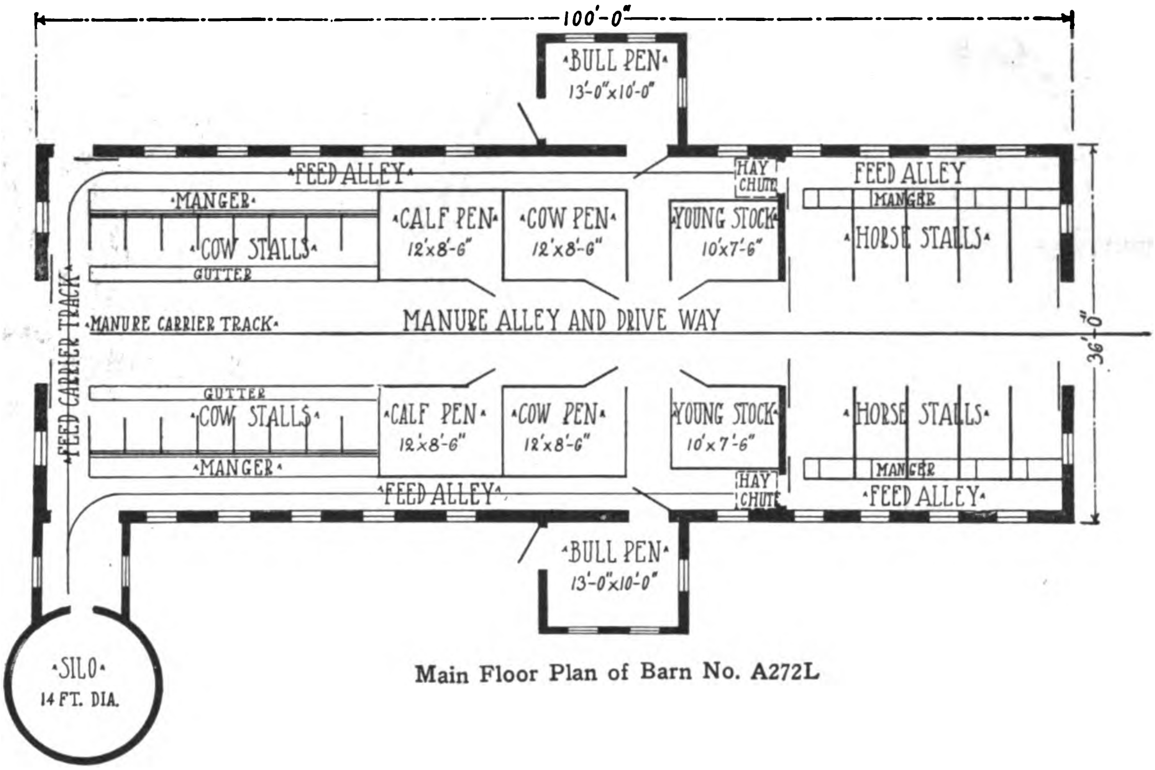
The ceiling over the horse stalls is 10 feet in height and the ceiling over the cow pens is 8 feet, as it is generally recognized that a horse stable requires a little more height than the cow stable.

There are stalls for sixteen cows, and four pens for calves, and there are two box stalls next to the solid partition. There are two bull pens shown in the plan, either of which may be used according to the layout of the yards.

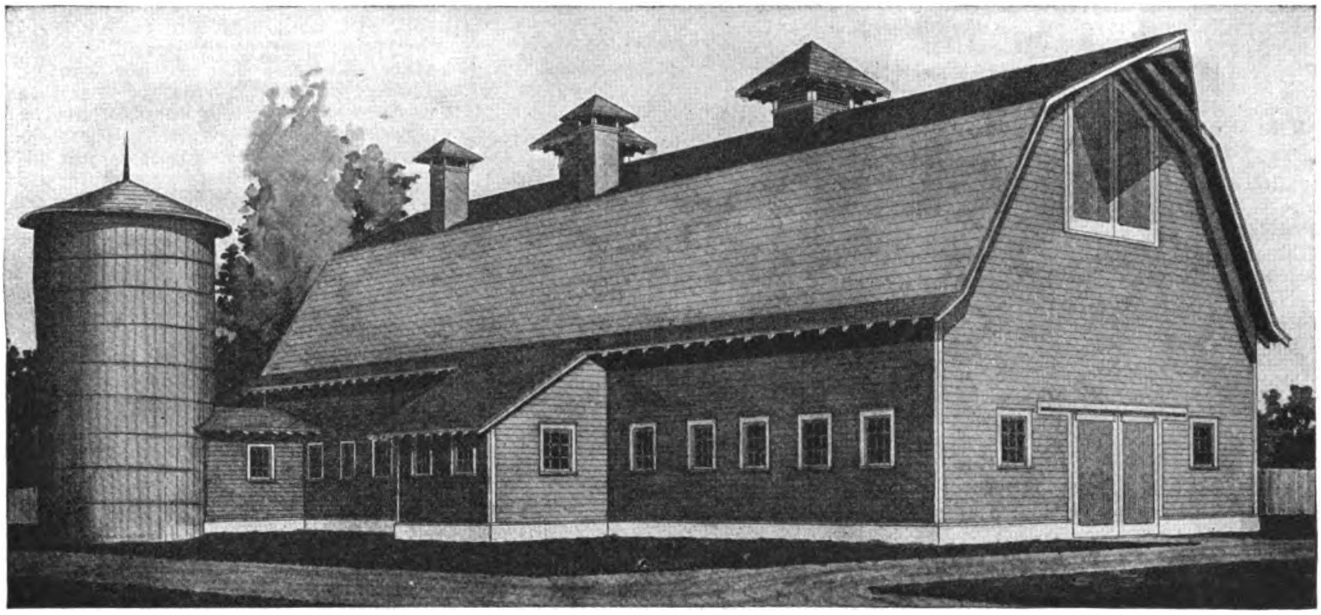
The floor plan has been carefully worked out to provide convenient feed alleys, hay chutes, etc.

In the cow stable the concrete floor is laid in such a way that additional cow stalls may be added at any time as the dairy herd increases. The time will come when regular cow stalls will be required instead of some of the calf pen room. When this time comes, some other provision will be made for the young stock. In planning farm stables such contingencies must be taken into consideration.

In this plan the silo is 14 feet in diameter, which is large enough for the stable as it is designed. Most feeders prefer a silo about this diameter, it is better to have two small ones.



Main Floor Plan of Barn No. A272L

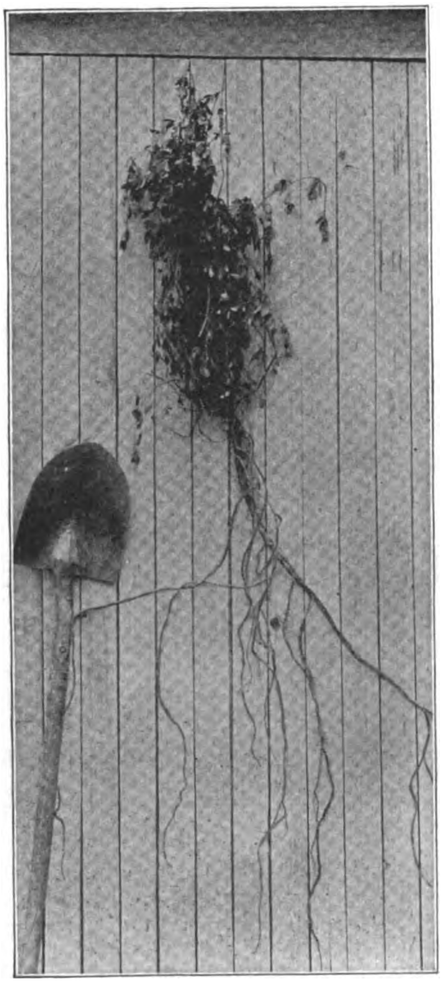


ONE HUNDRED-FOOT STOCK BARN

A 36 by 100-ft. gambrel-roof barn with ground floor arranged for sixteen cows in stanchions, six cow and calf pens, two bull pens, and ten horse stalls. A 14-foot silo, together with the big hay storage space under the roof, provide plenty of room for feed. Barn is arranged with central driveway clear through from end to end. Feed and litter carriers help to make the work easy. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00. When ordering, ask for Design No. A272L.

Grow Alfalfa and Fill the Money Bag!

How to Grow Alfalfa



Alfalfa, one year growth—7 feet 8¾ inches long. The great tap-root goes down and finds moisture, even in a "dry time."

Alfalfa is easily grown in some soils and climates, while in others it seems almost impossible. It will grow in sand and in loam and in stiff clay. It is not particular about the character of the soil, so long as it is warm, and porous, and contains sufficient moisture, together with the necessary bacteria.

The water table must not be too near the surface, still, sometimes good alfalfa is grown on comparatively low ground, that even overflows at times, —if the drainage is good. Running water for a day or so won't hurt alfalfa, but the water must not stand on it.

Tile Draining to Improve Land

Lands that are naturally too wet for alfalfa often turn off the best and largest yields when they are tile drained.

Theoretically, tile drains should be deep down in the ground. A line of tile put down 10 feet below the surface in a free soil will drain a wide swath, but the cost is too great. Then, it generally happens that the land we are working with is either very close grained or it may be underlaid with hard pan, or from some other cause water can hardly go through it. In that case, a tile drain, 10 feet deep, would be useless.

There is no hard and fast rule for the depth of tile drains, at the same time farmers who have done much tiling prefer a drain no less than 4 feet down from the surface. Sometimes it is not possible to get an outlet for tile drains 4 feet deep, but such places are generally left until the last. It i snatural to select the easy places first and to tackle the difficult jobs after we have had experience.

Bacteria Needed

Good alfalfa soil is alive, it contains humus which feeds different kinds of bacteria. These microscopical workers are busy preparing plant food for the young alfalfa plants. They are the chemists in nature's laboratory, engaged in manufacturing and injecting carefully prepared plant food into what we call soil water. For raw material, these minute workers have the buried organic fiber of plants, together with the soil particles containing the different elements that go to make up plants as ordinarily found in good soil, with the addition of carbon from the atmosphere and possibly some other chemicals that are not wanted. These different forms of bacteria work with the crude humus that the plow has turned under. There is nitrogen in humus, but it is not always available until these minute soil workers break it down and convert it into soluble nitrates.

In this soil laboratory, other work is carried on that is vital to the life of alfalfa.

Special bacteria is necessary for the mature growth of alfalfa. Certain nitrogen gathering bacteria build interesting little habitations on the alfalfa roots and carry on a chemical manufacturing plant of their own which renders the extraction of nitrogen from the atmosphere easy, and the future life and prosperity of the alfalfa plant possible. This particular kind of bacteria, is scarce in some soils. There are instances where artificial inoculation is necessary and there are still other soils where they refuse to live. On such soils, the growth of alfalfa can never be successful until some means is discovered for satisfying these little workers.

Carbonate of Lime

It is useless to try to grow alfalfa on soil that is deficient in lime.

Carbonate of lime is the common form of lime rock. It is not caustic like burned lime, but is pleasant to handle. It is present in some soils in sufficient quantities, but throughout the humid sections of the United States, it must, in a great many instances, be supplied in order to grow alfalfa successfully. It is easy to make the statement that alfalfa will not grow without lime, but not so easy to give the reason why. Part of the secret lies in the nitrifying bacteria, for they are necessary for the prosperity of alfalfa, and they cannot thrive without lime.

There may also be some contributory causes. Lime may act as a cleansing agent in neutralizing certain foul or poisonous excretions exuded from the rank growth of alfalfa. It is a disputed question whether certain plants poison the soil against their own production, but if this theory is discarded, it is difficult to explain some peculiarities in the growth of plants.

It is necessary to apply lime to most soils where the rainfall exceeds 15 or 20 inches per annum before alfalfa may be grown to advantage. The semi-arid soils of the West contain sufficient lime, and on such soils alfalfa grows naturally and happily; but the rains in the East leach out the lime.

Lumber dealers either carry lime in stock or know where to get the proper kind.

Feeding Value of Alfalfa

For dairy cows, good bright alfalfa hay is worth almost as much, pound for pound, as wheat bran. This estimate is made from actual returns. But alfalfa hay has another value that cannot be figured in this way. It is really worth more than wheat bran to feed, because it not only furnishes about the same food value, but the cows get exactly the kind and about the quantity of roughage that their big stomachs need.

When cows are fed large quantities of concentrated protein foods to force a big milk flow, they suffer in health and general vitality; but when the bulk of the protein is supplied by feeding alfalfa hay, then the cows recover their old-time vigor, and very often the milk yield is increased because of this natural physical improvement.

A Good Barn Bursting with Alfalfa makes the Farm Stock Glad

Little Grain Needed

When alfalfa hay is fed with good corn silage, grain is hardly needed, because alfalfa and silage make nearly a balanced ration. A little grain by way of variety is relished by the cows, and it is beneficial, but the amount fed should be small.

Palatability is an essential part of feeding rations, but there are no market quotations to fix a standard of value for palatability. We know by their behavior and general appearance that cows like their food where alfalfa and corn silage are fed alternately.

We also like the flavor of the milk and the beef that is produced by this kind of feeding.

Alfalfa Meal

The principal advantage in alfalfa meal is for shipping. As it weighs heavier than the same bulk of alfalfa hay, it may be shipped at a cheaper freight rate.

Grinding adds nothing to alfalfa hay; it does not reduce the percentage of waste materially and it is difficult to judge the quality.

The cows, as well as other live stock, enjoy chewing alfalfa, so that, all things considered, for ordinary farm feeding the hay is preferable to the meal.

Alfalfa Silage

Alfalfa hay is so valuable, that while it makes good silage, the advantage is not enough to pay for the extra cost of putting it into the silo. Corn is so easily grown and it makes such excellent silage; besides, corn for silage and alfalfa hay for roughage, together make such a splendid combination, that it is not good policy to try to improve on a ration of this kind.

Frosted Alfalfa

Sometimes the fall growth of alfalfa gets nipped with an early frost. Stock running on alfalfa that is frozen at the top, sometimes suffer from a kind of poisoning. It is more or less serious according to conditions.

Hogs and Alfalfa

By Alfred Wenz, Bath, So. Dak.

The hog is naturally a grazing animal. Left to himself he travels far, consumes much grass and roughage and keeps in good condition.

Yard feeding hogs is an expensive and laborious process. Careful figuring is necessary to make a profit, and an off market will often destroy this. It is nothing uncommon for feeders to let go—they can make more out of the corn by selling the corn direct. Besides, yarded hogs cannot be kept hearty and healthy so easily.

The best hog pasture in this country (northern South Dakota), is alfalfa. When established, it produces an immense amount of green feed which hogs especially like and thrive on. It lasts for years. It is drought-resist-

Harvesting the Third Crop of the Season of Alfalfa Hay on the Farm near Mechanicsburg, Ohio, of Joseph E. Wing, Agricultural Expert of the Breeder's Gazette.

ant—when other pastures burn bare alfalfa, except in extreme cases, keeps on giving succulent picking.

Pasturing hogs on alfalfa is easier for the farmer and better for the hog. It saves much choring, as the hog picks much of his living and gets along famously with the alfalfa and a little ear corn thrown over the fence. Ear corn is about the easiest feed to get to a hog; alfalfa added to it, makes a balanced ration. Light feeds of corn and his fill of alfalfa while the hog is growing, make a rugged body and powerful frame on which a lard finish can be put quickly and economically. Turn the hog into the cornfield at fattening time but let him still have access to the alfalfa. He will eat much of it and turn the corn to better advantage, making more gain from the same amount of corn.

This balanced ration should be used the year around, substituting hay in winter for the pasture. There is no better winter feed for brood sows than alfalfa hay.

This is an economical way of raising hogs. A good deal of protein in the form of mill feed and the like must be purchased if there is no alfalfa. Bran sells around $22.00. Alfalfa hay is practically the equal of bran—the leaves fully equal bran in kind and quality of food value. We have cut as high as 2½ tons per acre at a single cutting of alfalfa and have never had an entire failure. This beats buying bran, especially when you can let the pigs do the cutting and gathering. In addition, the alfalfa benefits the soil, puts nitrogen into it, and the hogs scatter much manure. Raising hogs on alfalfa means raising the equivalent of bran and feeding it without labor.

If it were not for alfalfa we would have no hogs on the Wenz farm. With alfalfa we find hogs a profitable venture. We do not try for a big hog; we aim at a good product and a sure margin of profit. Alfalfa insures us this. Our pig raising is strictly an alfalfa proposition with mill feed used as a starter at farrowing time and corn depended on to balance the ration and finish the product. Our hogs get no milk, slops or swill.

For 3 years, 1910-12, our hogs had the run of a 9⅝-acre alfalfa pasture, an average of over 90 being on each season. After that, the pasture was plowed up and a new one utilized. We figure that the hogs get one-half their feed from the alfalfa. The bulk or their living they pick in the pasture, so it is fair to credit the pasture with one-half the hog sales. In addition, we had a cut of hay each year, well worth $15.00 a ton for feed. The income in pork and hay was:

1910	Pork	$480.25
	Hay, 8½ T	127.50
1911	Pork	417.13
	Hay, 7½ T	112.50
1912	Pork	648.65
	Hay, 4 T	60.00
		$1846.03

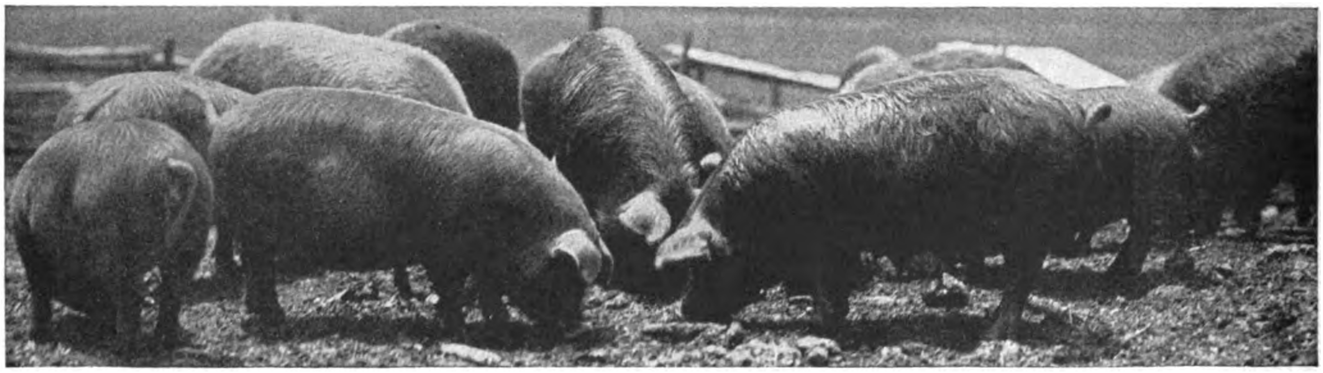
less an expense of:

Rental, including initial cost of establishing alfalfa sod, counted $9.17 per acre, 9⅝ acres 3 years	$264.08
Labor making 3 crops of hay	35.00
Interest and repairs and depreciation on fencing	64.50
	$363.58

This is a net income of $1482.45 from the pasture in 3 years, or $51.34 per acre per year.

For several reasons we made computations on the cost per pound of producing pork under this system, figuring in rental, interest on plant, depreciation, interest on value of brood animals, labor and feed. The cost in 1911 was $3.51 per cwt., in 1912, $3.37 per cwt. The alfalfa was largely responsible for these low figures.

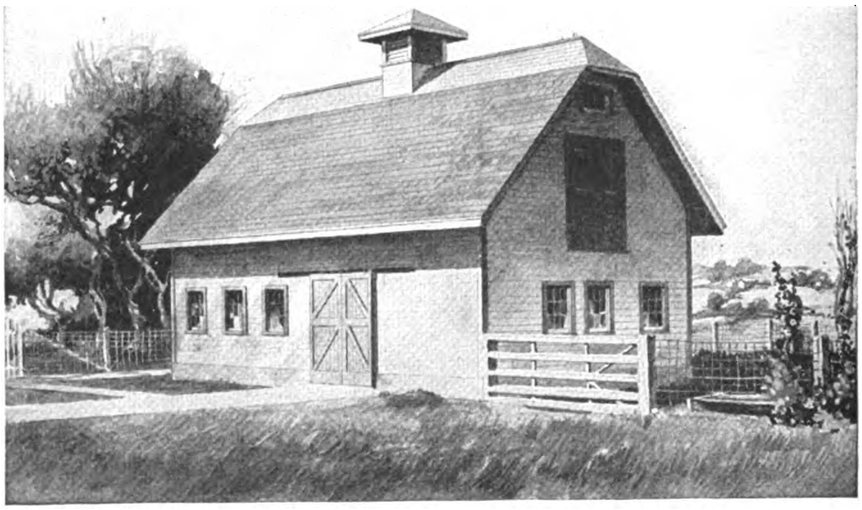
Alfred Wenz,
Bath, S. D.



Duroc Jersey Pigs of Popular Market Size, Pastured on Alfalfa at Edenburg, Ind.

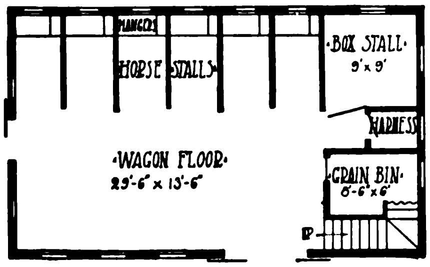
Horse and Wagon Barn—Design A231L

A general purpose barn, 24 by 40 feet, is given in this illustration. A great many farmers have use for a small combination barn and storage building after this fashion. It is handy for a horse barn to stable two or three horses that are kept in trim for work or driving during the winter. Considerable storage for grain may be had in the grain room, and the mow room in the back is large enough to feed a small amount of stock. A building like this looks better when painted a light body color with darker trim.



HORSE BARN WITH MODIFIED GABLE ROOF

A stylish horse barn with six stalls and box stall, harness room, grain bin and good sized wagon space on the ground floor. Size of building, 40 by 24 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00. When ordering, ask for Design No. A231L.



Floor Plan of Barn A231L

SOIL BETTERMENT

Draining and Fertilizing Land

Lime as a Soil Improver

The Use of Lime in Ordinary Soils

For thousands of years the value of lime when applied to certain soils has been recognized; but the reason why has never been thoroughly well known. Lime is widely distributed, but it so happens that certain sections are deficient in lime, and in these places agriculture is usually not a good business.

Lime is what might be termed an indirect fertilizer. It also has a peculiar influence in knitting together the loose particles of sandy soils and of slaking or loosening plastic clay soils so the water can get through.

Lime is recognized as possessing three qualifications as a soil improver. They are physical, chemical and biological. Chemically, it breaks down certain refractory sources of plant food. It improves the physical condition of the soil, so it cultivates better and controls moisture better. Biologically, it establishes conditions under which different kinds of soil bacteria are enabled to do the improvement work as nature intended.

Testing Soil for Acid

When soil contains sufficient lime, it is free from destructive acids. There is a simple acid testing material, known as "litmus paper," that can be bought at any drug store. The litmus paper test is very simple, but, as ordinarily described, it is not reliable. Theoretically, when blue litmus paper is pressed against the soil, it will change from blue to red if the soil is acid. But practically, the test must be applied with great care. Neutral litmus paper only is fit for a test of this kind. It must be of a quality that is very sensitive to soil acid.

In applying the paper, to get positive results, the soil must be moist and sufficient time allowed to permit the moisture in the soil to penetrate the paper. A slight reddish tinge is sufficient indication that everything is not right.

A crude test for lime may be made with muriatic acid. Put an ounce of soil in a glass or porcelain dish and pour on a little muriatic acid. If it boils, there is lime in the soil. The activity of the boiling is an indication of the quantity of lime. A person accustomed to using muriatic acid on different soils soon learns to estimate its value.

If clover refuses to grow, the probabilities are that the soil is deficient in lime. Slate or shale soils usually lack lime. Granite is suspicious. If horse sorrel grows, it is a sure indication that lime is needed.

Applying Lime to Soil

Ground limestone is the most economical way of applying lime to the soil. Quicklime requires very careful management, and it is not pleasant to handle. Lime sinks into the soil easily; for this reason it should be worked into the top soil. Sometimes beds of marl close at home are neglected and lime brought a distance.

Marl is likely to consist of carbonate of lime and clay, with some other substance. Some marls carry potash and phosphoric acid, but they are not common.

Lime is in no sense a manure; it is not a fertilizer. The old saying, that "Lime makes the father rich but the son poor," is a senseless old adage. Limestone soils wear the best, produce the best crops and feed the best live stock, including the human inhabitants.

Most lumbermen carry lime in stock. It is best to talk with your dealer about it, for he can give you direct information about lime and fertilizers.

We know several lumber dealers who regularly furnish lime at cost.

Land Float for Irrigating

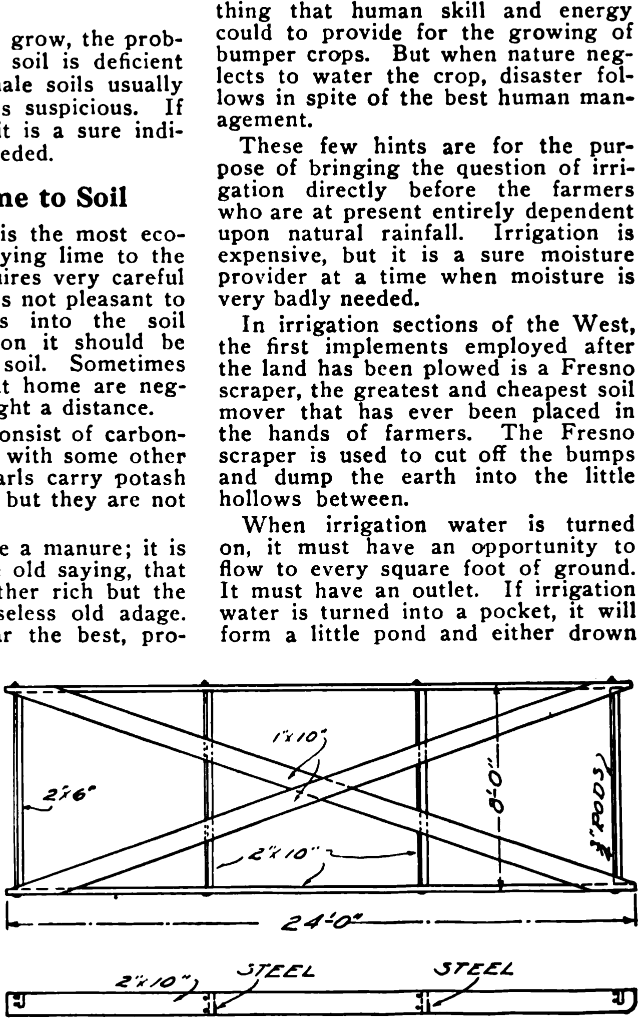
Mention is made in one or two places in this book about irrigation in humid sections. There are a great many farms where water may be obtained in sufficient quantity to irrigate a good many acres.

Almost every season there is a "spell" of dry weather that keeps everyone guessing. In many instances the farmer has done everything that human skill and energy could to provide for the growing of bumper crops. But when nature neglects to water the crop, disaster follows in spite of the best human management.

These few hints are for the purpose of bringing the question of irrigation directly before the farmers who are at present entirely dependent upon natural rainfall. Irrigation is expensive, but it is a sure moisture provider at a time when moisture is very badly needed.

In irrigation sections of the West, the first implements employed after the land has been plowed is a Fresno scraper, the greatest and cheapest soil mover that has ever been placed in the hands of farmers. The Fresno scraper is used to cut off the bumps and dump the earth into the little hollows between.

When irrigation water is turned on, it must have an opportunity to flow to every square foot of ground. It must have an outlet. If irrigation water is turned into a pocket, it will form a little pond and either drown



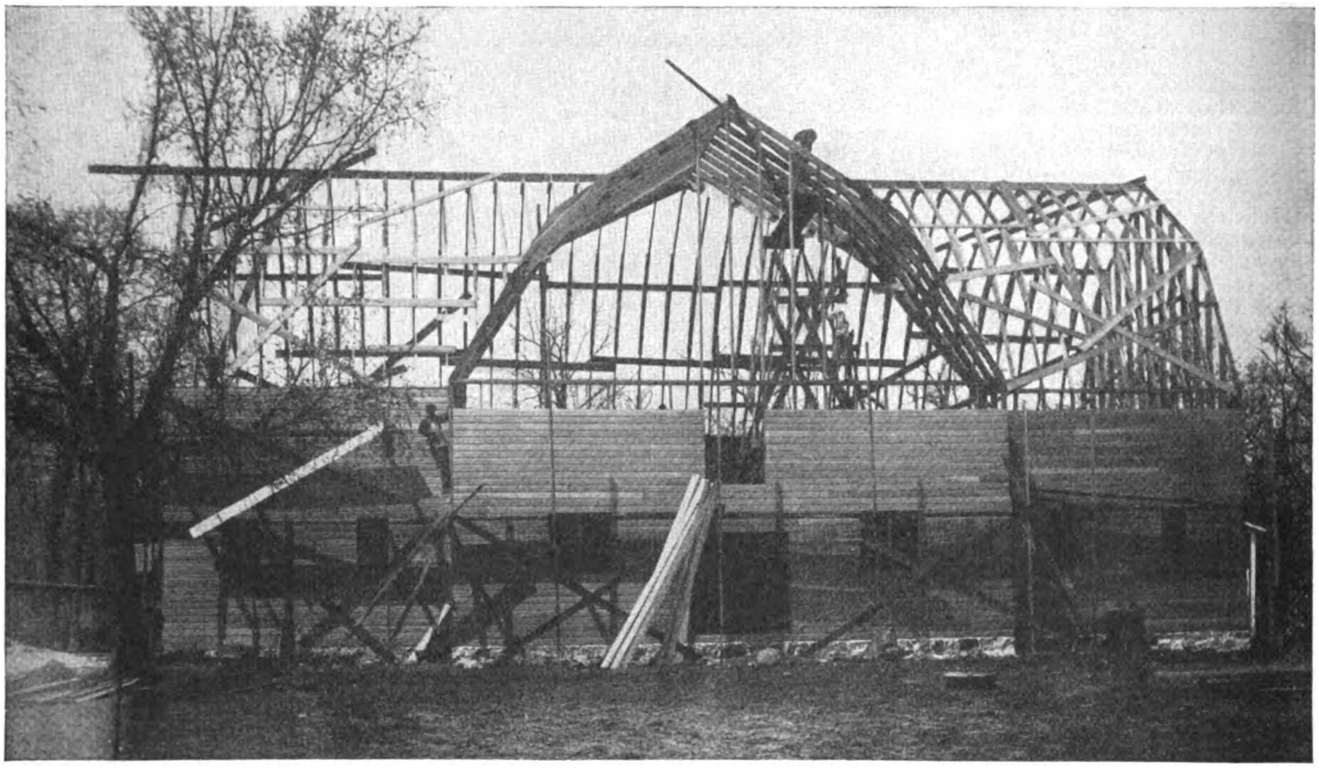
Top and Edge Views of Land Leveling Drag to Fit Fields for Irrigation

If your neighbor is going to build tell him about this book—and do both him and us a good turn.

the crop or scald it when the sun shines hot. If it soaks away without doing either, then it leaves a hard crust. For this reason, the land must have a gentle slope. The duty of the irrigator is to provide an even distribution of water and a ready means of getting rid of the surplus when the crop has had enough.

Next to the Fresno scraper comes the float, shown in the illustration. The float is a land plane. When properly constructed, it will do splendid work. There are a good many shapes and sizes of floats, but this is the best of them all for soil that is fairly loose.

This float is 24 or 26 feet long and about 8 feet wide. There are four cross pieces, two of which are even with the bottoms of the runners. The spaces between are evenly divided. In a 24-foot float the cross pieces are about 8 feet apart. The two center cross pieces are shod on the cutting edge with iron or steel. These cross pieces are flush with the runners, top and bottom. The runners usually are 10 inches wide and the cross pieces should be 3 by 10; 2 by 10 will do if backed by a 2 by 4, turned edgeways to the scraper. The front and rear cross pieces do no execution, they are simply to tie the ends of the runners together to maintain a rigid construction.



View of North Dakota General Farm Barn, Design No. A261L, taken during construction. Note how rafters are framed for 36-foot full-height gambrel dormer. This gives an immense space for hay storage, besides strengthening the roof.

There are eight rods reaching from one side of the float to the other with heavy washers and nuts screwed up tight to prevent the runners from pulling apart. The runners are rounded slightly in front so they won't dig in.

In operation the float slides along evenly and true to the natural grade of the land. The two cross blades in the center, scrape the knolls, push the loose earth along in front and spread it out evenly in the little hollows. The front cross piece and the back cross piece must be set up from the ground 3 or 4 inches, otherwise they will gouge out the low places and skip the high spots. This principle in the operation of a float is where a great many irrigation farmers go wrong and they wonder why they have to go over a field so many times before it will carry water in the corrugations.

It takes considerable power to pull a float like this when it is weighted down to do its best. Sometimes the weight of the driver is sufficient, but time is an object. It is better to put on four heavy horses and a sack or two of sand than to waste time in going over the field several times.

It is a great satisfaction to have a carefully graded surface for ordinary cultivation when no irrigation is intended. This implement probably would be worth a great deal to true up the land of ordinary cultivation. For irrigation it is absolutely indispensable.

Land cannot be irrigated until it is graded to carry water. After the grading is done, small corrugations will lead the water across the field. Of course, the water must be followed the first time across because the muddy earth and trash will carry along and sometimes deposit where it is not wanted. After the corrugations are once wet down then the water will flow like so many little creeks, until the land has received water enough.

In the irrigation sections, an implement called a corrugator is used to make the corrugations. These tools have rooting noses bolted on to the cross pieces in such a way that they can be moved out or in to make the corrugations closer or farther apart, according to the character of the soil that is being worked. Some soils will sub for a distance of 8 or 10 feet, while other soils are so close grained that the water will not sub more than a foot. (Sub means a property of soil by which it soaks up the water on the principle of a sponge. If a sponge is wet on one side, the water finds its way through the sponge in every direction.)

A corrugator may be made by bolting a cross piece to the hounds of a wagon tongue. Pointed shovel blades may be fastened in an upright position to the front of the cross pieces so they will project below a distance of about 4 or 6 inches. There is no set rule for the depth or size of corrugations, they differ according to soil. Some experience usually is necessary to get them right. The main thing is to make little ditches that will carry the water and to make them quickly.

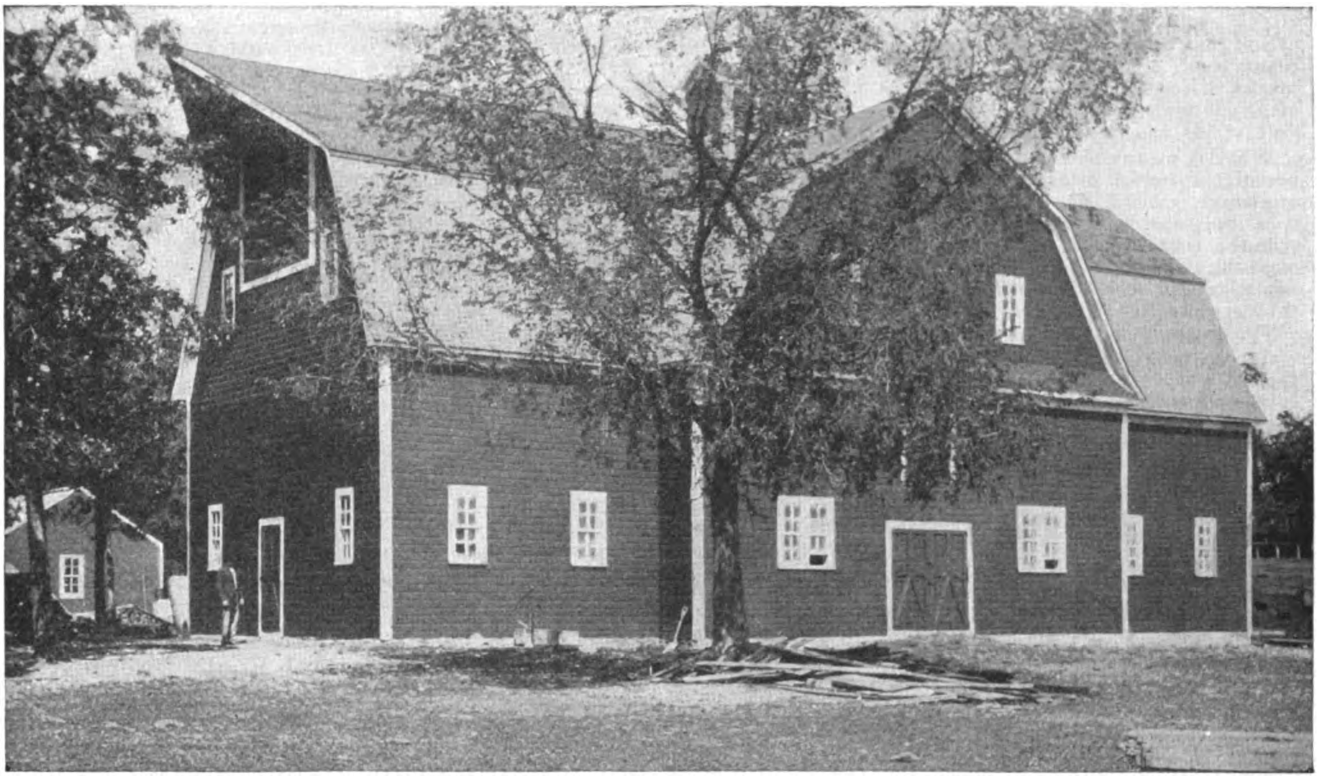
There are government bulletins giving full and complete instructions for irrigating according to the different systems employed. These systems vary according to the slope of the land, texture of the soil, kind of crops irrigated, water supply, etc.

Moisture Requirements of Grain Crops

In the humid districts, it is seldom that a grain crop receives all the moisture it could use to advantage. It is customary to plant clover in wheat fields, also with rye and sometimes with oats or barley.

It is noticeable that clover will grow splendidly in oats and barley fields during the early part of the season when rains are frequent, but it soon dies and often almost entirely disappears when the dry weather

WE can furnish complete blue-prints for any building illustrated in this book. See under each picture for low price of blue-prints.



LARGE NORTH DAKOTA GENERAL FARM BARN

Handsome gambrel roof design having full height gambrel dormer 36 feet wide in the center of one side. General dimensions of barn 72 by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A261L.

comes along in the middle of summer. Some farmers have almost given up growing clover for this reason, and without knowing the reason why. Under such conditions, lime is of little benefit.

The fact is, ripening grain requires an immense amount of moisture, and the plants pump the soil dry. Dig down in any stubble field after the grain has been cut and you will wonder how any plant could live in soil so dry.

One reason why greater yields of grain are grown under irrigation is because an irrigation farmer will supply water just when the crop needs it most. When wheat turns a dark green color, showing that moisture has been pretty well used up, then the irrigation farmer opens the flood gates and lets the water through the corrugations in the wheat fields. The plants take up the moisture and the leaves brighten up and the grains fill out in rounded perfection, and he threshes fifty bushels to the acre. If the humid farmer had water to turn on his field at the right time, he could harvest a big crop, too, and prevent his clover from dying.

The yield of potatoes under irrigation often counts up to 500 and sometimes to 700 bushels per acre, which may be accounted for principally because the potato vines got the moisture to stuff the potato skins to the limit.

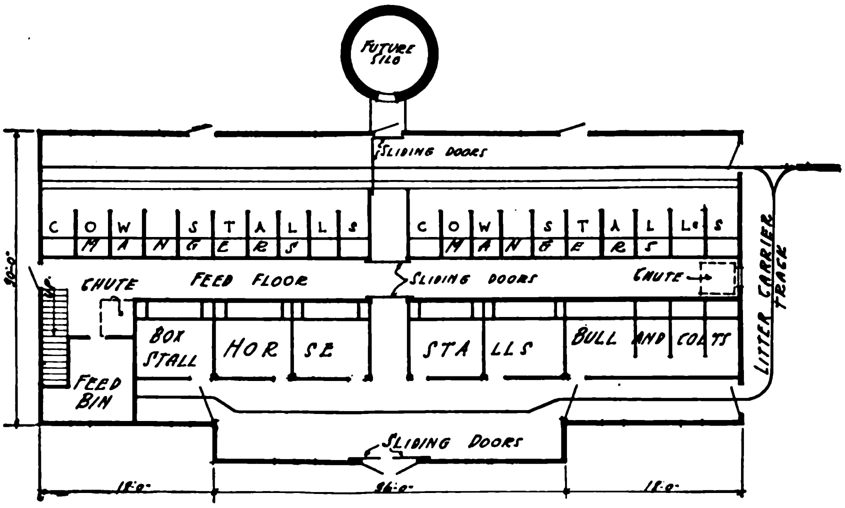
Muddy feed lots are too common. It is not pleasant to think of the amount of filth the cattle and hogs consume with their feed, through no fault of their own.

North Dakota General Barn —Design A261L

A barn, 30 by 72 feet, built for a North Dakota former, 'is illustrated here. The foundation is of stone and the floor is of concrete. The stalls are of the most improved pattern, fitted with tubular stanchions, manure and litter carriers and other modern building conveniences.

This roof was especially designed for strength to withstand the stiffest North Dakota blizzard, and that is why the strong gable was built. The studding is 2 by 6, placed 24 inches on centers, and well braced. The ceiling joists are 2 by 10, placed 16 inches on centers, also well bridged.

There are stalls for twenty cows, arranged along one side, while the other side of the basement is arranged for horse stables, bull pens, calf pens, feed rooms, stairway, etc. The building is 30 feet in width by 72 feet in length, neatly finished and painted, so it affords a very pleasing appearance. It is symmetrical outside and well arranged inside. It is one of the cornbelt barns that is helping to solve the winter feeding question so that a farmer can make money in the winter as well as in summer.



Floor Plan of Barn No. A261L.

Soil and Water and Plants

Soil may contain all the elements of plant food, and it may have all the marks of fertility, but without a sufficient amount of "soil water," profitable yields are impossible.

What is meant by "soil water" is a peculiar form of moisture not found anywhere except in well-tilled soil; it is moisture so thoroughly well distributed that the hair roots of plants may absorb it in a very small, minute particles and feed it to the plants as they require it.

The ground may be saturated with water without helping plant growth; that is, when the earth is waterlogged —when the water table rises too near the surface. But that is not soil water, that is swamp water.

Soil water is a mixture of air and water. It is also called "film moisture," because it surrounds each little particle of earth with a film of moisture, leaving a space between each film that contains air. Plants want moisture prepared in this way. Well-tilled soil is the laboratory supplied by nature, assisted by the farmer, for the preparation of this kind of mixture. Well-tilled soil is the only manufacturing plant where such moisture is produced — the only place where valuable farm crops grow and thrive.

Soil moisture is regulated by cultivation, by tilling when the soil is naturally too wet. By surface cultivation during the dry summer, by fall plowing to catch and hold the winter rains, and by maintaining a sufficient amounts of humus. Humus is another name for organic matter supplied by rotting of roots, leaves and stalks of plants.

Soil water is more than water, it is a natural solvent prepared by nature to dissolve out of the soil the different plant constituents.

Except on irrigated land, the farmer has no control of the supply of water. He may conserve what he gets by proper cultivation, but he cannot add to the supply that nature deals out to him. The moisture problem is complicated, because in the so-called humid sections of the country, rainfall varies from year to year, and it sometimes happens that farm crops are cut short by extra dry weather during the growing period.

Temporary Irrigation Saves "Money Crops"

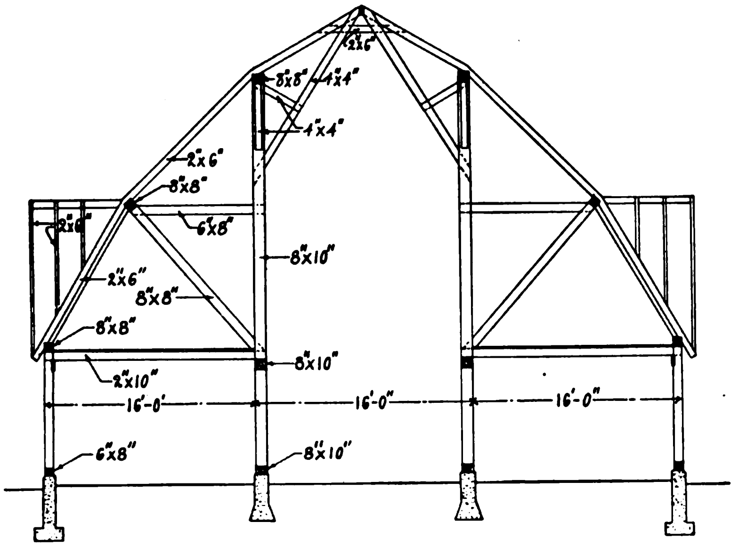
In some of the Eastern States, where the annual rainfall is between 30 and 40 inches, certain progressive farmers have experimented in providing auxiliary moisture by a temporary system of irrigation. What might be called "money crops," such as strawberries and potatoes, have been selected for these experiments.

It often happens that a dry week just as strawberries are setting, will dry up the blossoms and shorten the yield terribly. By running streams of water between the rows, the necessary moisture is supplied at the critical time and the vines are made to yield strawberries by the bushel, where, otherwise, the crop would have been a practical failure.

Potatoes have been encouraged by irrigation, to turn off from 300 to 600 bushels per acre. Even larger yields have been reported where a good system of irrigation on well-drained soil has been operated by experts. The average yield of potatoes under natural rainfall in the Middle West is less than ninety bushels.

Soil Requires Air

When natural rainfall percolates down into the ground, it drives out the air, but air again follows the rainwater as it sinks into the earth. In this way soil is said to breathe. It is nature's way of furnishing fresh air to the soil. Air and rain water, both carry carbon down into the soil. Carbon is held in suspension in the atmosphere in the form of carbonic acid gas, a combination of carbon and oxygen. Rain washes it out of the air and carries it down into the earth, where it is operated upon by the soil water before being taken up by the roots of plants and sent up to the leaves to be worked into the structure of the plant by the action of the sun upon the different substances in this wonderful leaf department of nature's laboratory. Carbonic acid also enters the leaves of plants directly from the atmosphere. The action of the sun upon the healthy leaf decomposes the carbonic acid by liberating the oxygen. The carbon then enters the structure of the plant through the action of the sun and the influence of chlorophyll in the green cells of the leaf.



Cross Section Through Heavy Timber, Double-Gambrel Roof Barn No. A126L

Earth Worms

Earth worms are great subsoil mixers, but they will not work in soil devoid of humus. We have all seen the little, light-colored, clayey deposits on the top of black soil that these industrious soil pulverizers have brought up during the night.

In moist ground, earth worms sometimes go to the depth of three or four feet. Much depends on the texture of the subsoil, moisture content, etc. An earth worm moves through the soil by eating the core of its hole. By muscular action, the worm presses its head forward to continue the excavation.

As the particles of soil pass through the worm, the muscles grind it, thereby reducing the coarser particles, something after the manner of digestion in the gizzard of a fowl. This is another one of nature's methods of preparing crude earth to feed the roots of plants .

Chemical Analysis

Laboratory tests may indicate with considerable accuracy the composition of the soil, but chemistry will not give us an accurate idea whether soil will grow crops or not. Chemical analysis will give a good indication of the amount and kind of fertility, but does not give positive proof as regards practical utility. For instance, a solid rock may contain considerable plant food, but it is useless for plant growth.

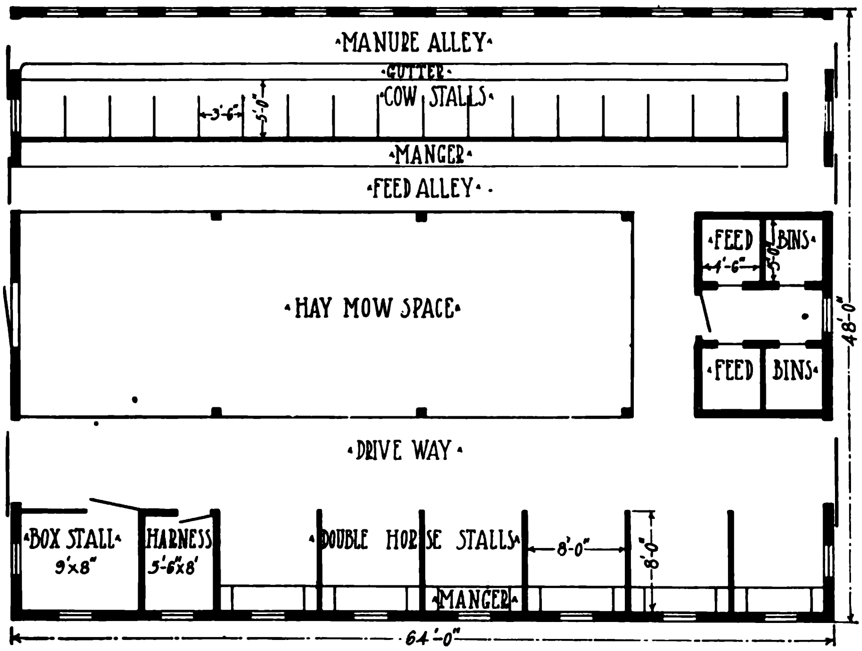
We don't really own our land until we have a good fence around it.

Cyclone Barn with Double Gambrel Roof—Design A126L

A design for a very strong barn is shown in this illustration. It is a timber frame construction that has been used a great deal in sections of the Middle West where heavy winds at certain seasons are frequent. It is so thoroughly braced in every direction that the strongest winds have very little effect on it.

These barns have been built in halves, one side at a time, when a farmer felt he could not afford a full sized barn, and instead of building lengthwise, he would build one side and use it as a shed for that year, then he would build the other part when he got the time and money to do it.

The roof is constructed on the cantilever principle, so that either side will stand alone. However, when the rafters are brought together to form the peak, the strength is then much more than doubled at that point. In addition to the truss bracing of the



Ground Plan of Barn No. A126L

rafters and timbers, each side of the roof has a large gable reaching up to the first hip. These gables make the lower part of the roof very rigid. They are really built more to strengthen the roof construction, and for light, than to add space to the mow. There is large storage capacity because of the width of the great roof. When inside, it looks like a circus tent.

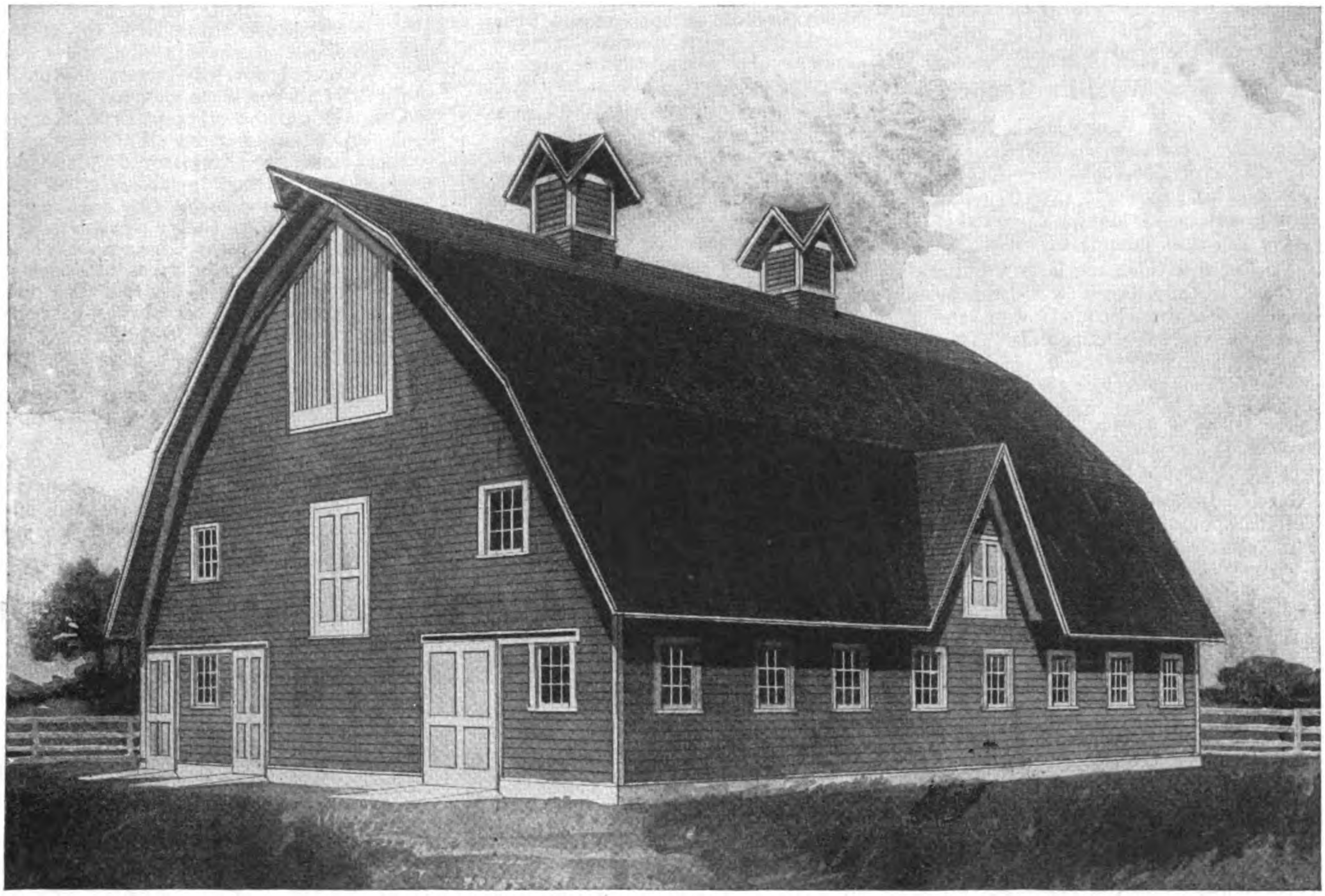
The barn is built for cows on one side and for horses on the other, with a great amount of hay storage and grain storage between. The passageway through to the granary and the hay is very convenient at feeding time. It is handy to get to either side of the barn. When it comes to the storage of roughage a plan like this beats them all. It is filled from the ground floor, and second floor, and under such a balloon roof you have feed storage enough to hold roughage for a great many head of live stock. It is about the most comfortable proposition at feeding time that a farmer can have.

There are stalls for seventeen cows and double stalls for twelve head of horses, besides a box stall, harness room and a good granary.

It is not necessary to put a cement floor over the whole barn bottom, but it is better to do so on account of rats. A barn as big as this makes a harbor for rats and they are much easier controlled when the floor is made of concrete. A rat hates a concrete floor.

Each farmer has his own ideas in regard to concrete floors for horses, but there is no difference of opinion when it comes to cow stables. Old, wooden, cow-stable floors are disliked by everyone. Concrete floors may not be absolutely perfect, but they are so much better than anything else that there is no room for argument.

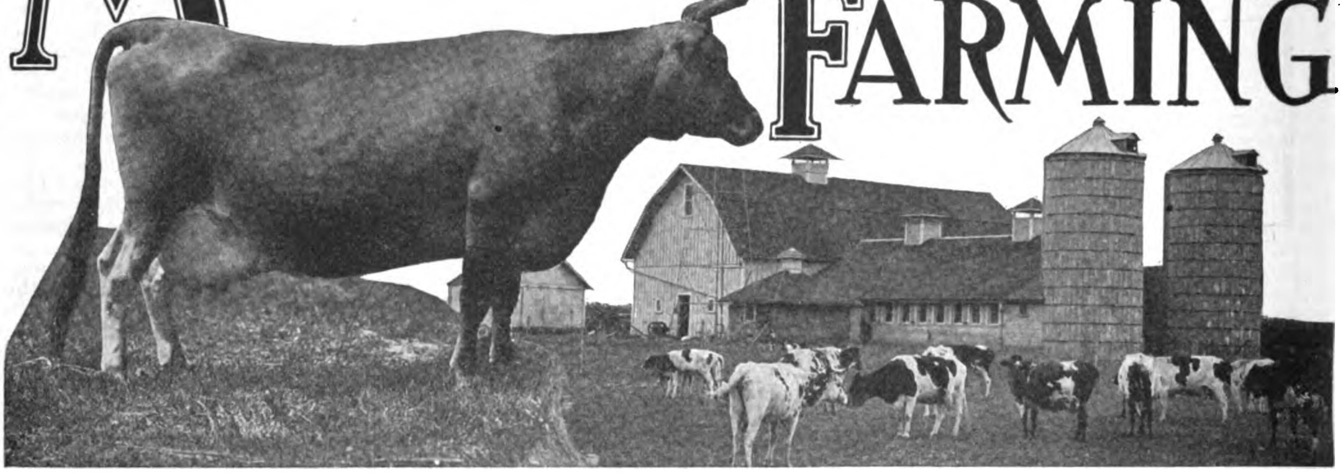
Notwithstanding its size, this is an easy barn to do the work in.



EXTRA WIDE HAY BARN WITH CYCLONE-PROOF DOUBLE-GAMBREL ROOF

Barn of 48-foot span, 64 feet long; heavy timber construction. Has stalls for seventeen cows and six double horse stalls. The hay mow extends clear down to the ground in the central part of the barn. Under this immense roof an enormous amount of hay or straw can be stored. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A126L

MODERN DAIRY FARMING



Ten Years' Improvement in the Dairy Business

There has been a wonderful development in the dairy business during the last dozen years. In 1904, at the St. Louis World's Fair, the cow, Loretta D., broke the world's record by producing 329.63 pounds of butter in 120 days. Her year's record however, was only 605 pounds. This was very good, but not up to the present standard.

A New World's Record

The Holstein cow, Duchess Skylark Ormsby, set a new world's record, Nov. 7, 1915, for 365-day butter-fat production. This cow made 1,205.09 pounds of butter-fat in 365 days. To do this, she gave 27,761.07 pounds of milk.

Up to this time, the largest butter-fat record of any breed was held by the Guernsey cow, Murne Cowan, and the amount was 1,098.18 pounds. The next largest Guernsey record was made by May Rilma and was 1,073.41 pounds. The largest record for a Jersey cow is held by Sophie 19th of Hood Farm and is 999 pounds 2.2 ounces of butter-fat. The largest Ayrshire record is held by Garclaugh May Mischief with a record of 1053 pounds of butter.

During the year and a half from May, 1914, to Nov., 1915, there was a rapid succession of new records made and then in turn broken. The leadership swung back and forth between the Guernsey and the Holstein-Friesians, finally resting with the latter popular breed. In all a net gain of over 131 pounds was made, which shows that the dairy breeds are progressing, that the work of record making in the dairy industry is still advancing, not in any sensational degree, but in a way that is indicative of the greatest and healthiest growth.

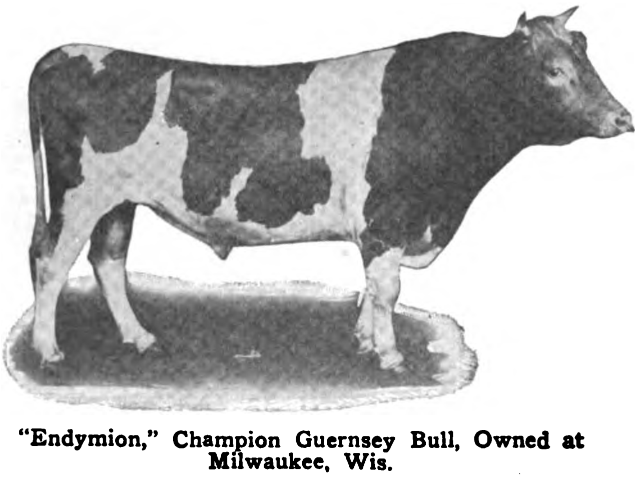
The great advance in the price of land has made the raising of grains and meats unprofitable in many sections of the country, notwithstanding the present high prices. This condition will become more aggravated as the years go by, and the only effective relief will be the dairy cow.

In fact, dairy farming is the *only sure way* to retain and increase the fertility of the soil. The dairy countries of the Old World have *constantly increased,* while the other countries have *lost* in the fertility of their soil. The cow — the poor, patient, meek-eyed, much-abused cow—will be the savior of this country, as she has been of other countries, where the people would starve to death without her. All that is necessary is to get *good cows,* and then *treat them well.* For every dollar spent in good treatment, the cow will give two in return.

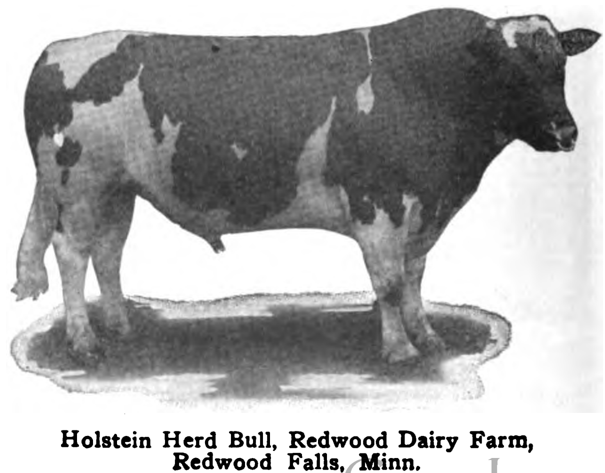
There are over twenty-two million cows in this country, and the value of their products is eight hundred million dollars per annum. Great as this sum is, it would be three times greater if *better* cows were kept and they were better cared for. Fourteen million of the present cows scarcely pay for their keeping, and the other eight million are depended on to make all the profits in the business. The lesson is plain, and should be learned by all. *Better cows and better care mean the doubling of the profits in the dairy business.* The cow is here to stay. The automobile or traction engine *may* take the place of the horse, but *what* can take the place of the cow? We will always have her with us—and should do the best we can with her.

Large General Barn with Dairy Stable—Design A236L

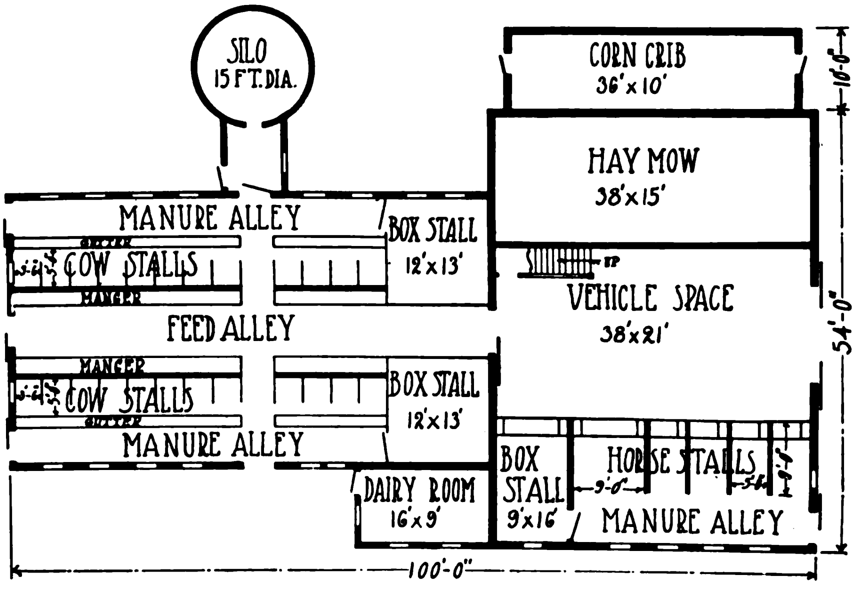
This illustration gives a combination of dairy stable, silo, storage barn with horse stable, corn crib and dairy room;



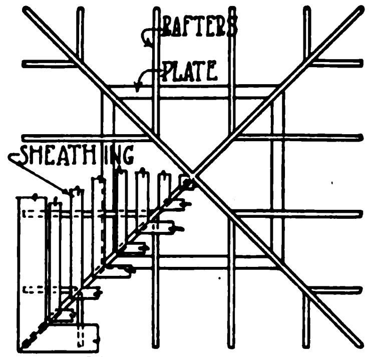
"Endymion," Champion Guernsey Bull, Owned at Milwaukee, Wis.



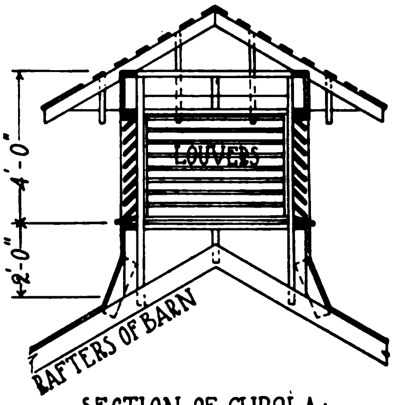
Holstein Herd Bull, Redwood Dairy Farm, Redwood Falls, Minn.



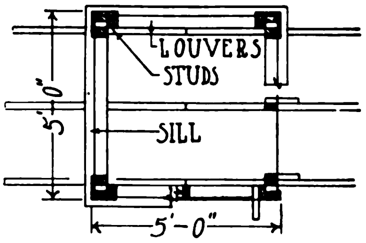
Main Floor Plan of Barn No. A236L



·PLAN OF RAFTERS·



·SECTION OF CUPOLA·



·FRAMING PLAN·

and it is a combination that is hard to beat.

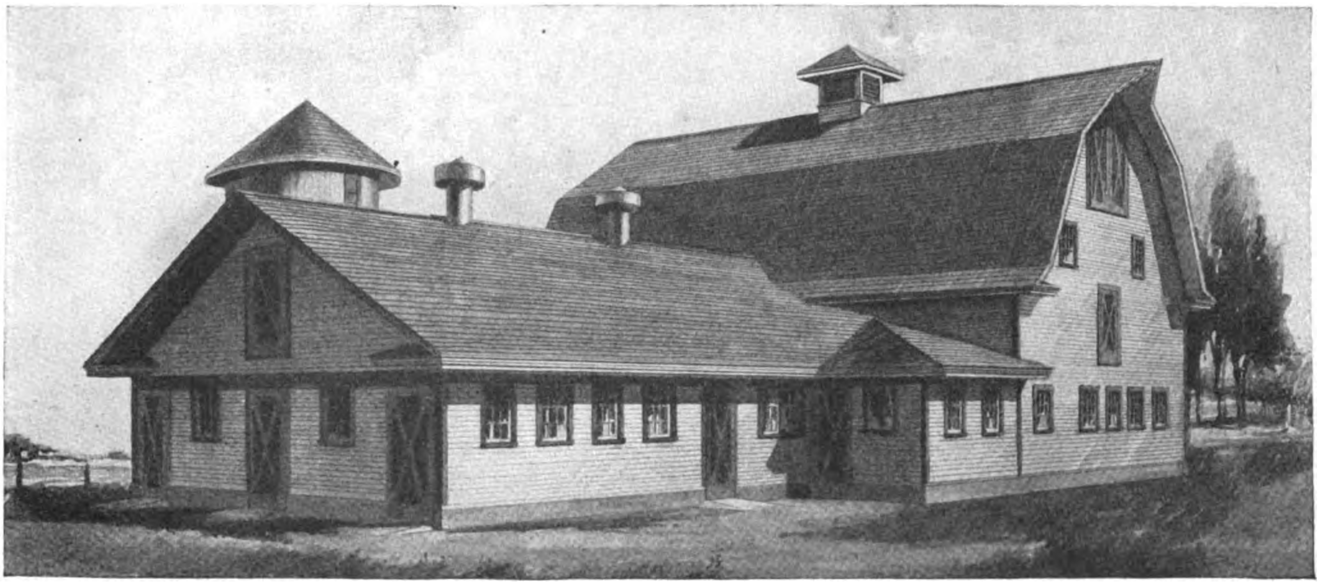
Those dairymen who do not like to have feed stored over the cows will like this plan. The dairy stable is arranged according to the very best dairy practice, with concrete floor, feed alleys and all the modern conveniences that go to make up a first-class dairy stable.

There is a good system of ventilation, the ceiling is the proper height, and the whole stable is made smooth and sanitary on the inside, while the outside is especially pleasing in appearance. The attic over the stable is simply an air chamber to keep the stable cool.

The silo is placed a little different from the ordinary, partly because of the storage barn and partly to save steps. The distance from the silage feed room to the middle stalls is less than when the silo is placed at the end of the stable. It is an advantage when the different feeding days for the whole year are figured in. The arrangement keeps the barnyard end of the cow stable entirely free for approach and get-away, which is another advantage, especially in the winter time, when yard room close to the stable is in demand.

A 10 by 36-foot corn crib is built on as an attachment to the storage barn. It is a little cheaper to build a crib in this way because of a saving in material. There must be an air space between the corn and the solid boarding of the barn. This space may be secured by placing slats in the crib several inches from the side of the barn.

One side of the storage barn is given over to hay from the ground up. This hay bay is open at the side, so the first few loads are rolled in from the vehicle floor. The upper floor joists are placed 12 feet above the vehicle floor, which gives sufficient head room to get in with



LARGE BARN WITH ONE-STORY COW STABLE ADDITION

A group of farm buildings right in principle, convenient in use, and economical to build. Horse and storage barn is a two-story gambrel roof building 54 by 40 feet. One-story dairy stable addition measures 60 by 36 feet. A 15-foot silo holds enough silage for the 24 cows. Dairy room is entirely separate from the rest of the barn. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for design No. A236L

a load of hay, as hayracks are ordinarily built. For the main tonnage, however, a hay door in the gable end and the horse fork machinery are brought into use. Taking the loft and the bay together, this plan offers storage for a large quantity of roughage.

A dairy room 9 by 16 feet is built in the corner between the two buildings. A dairy room is cooler for having the protection of large buildings in this manner, and the expense of building it is only about half as much as making a separate building. It is also convenient to stable without being in any way open to the objection of the old-style stable dairy room.

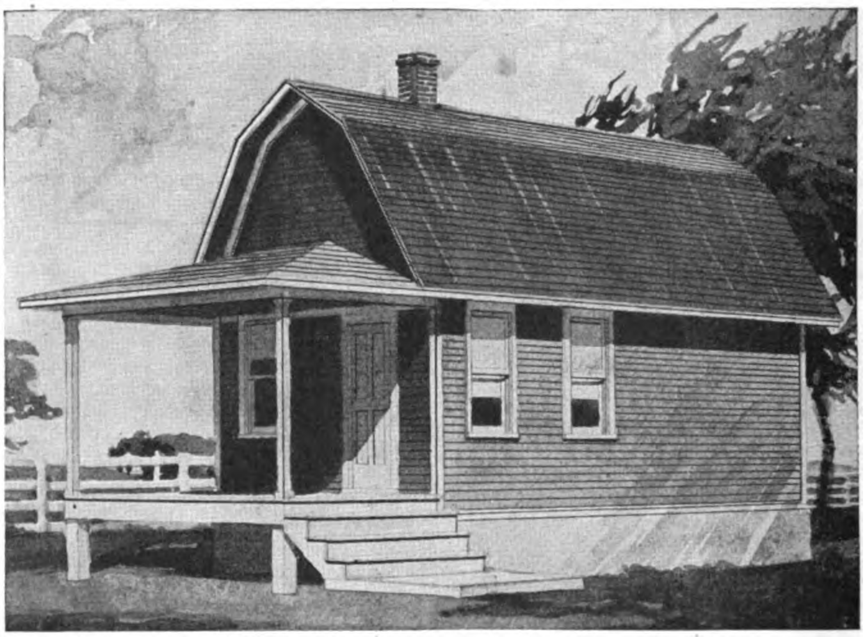
When all these conveniences are considered, together with the possibility of stabling so many head of cattle and horses and the storage of different kinds of feed convenient to get at, the plan will appeal to many farmers.

The detail drawings show how the wooden ventilator is constructed.

Combined Dairy and Ice House —Design A245L

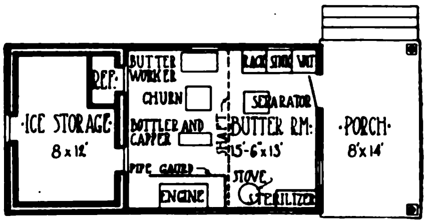
A very neat and convenient farm dairy and ice house is shown in this design. It gives an opportunity to build in such a way as to add to the appearance of the property, while increasing the profit and convenience of the farm.

The building is 26 by 14 feet, with a porch 8 feet wide. This front porch adds a great deal to the appearance of the building without adding very much to the cost, because a loading platform is necessary anyhow, so the only additional cost is the roof and the two corner posts. In putting up farm buildings, a little attention to appearances adds a great deal to the selling value of the property.



NEAT APPEARING COMBINED DAIRY AND ICE HOUSE

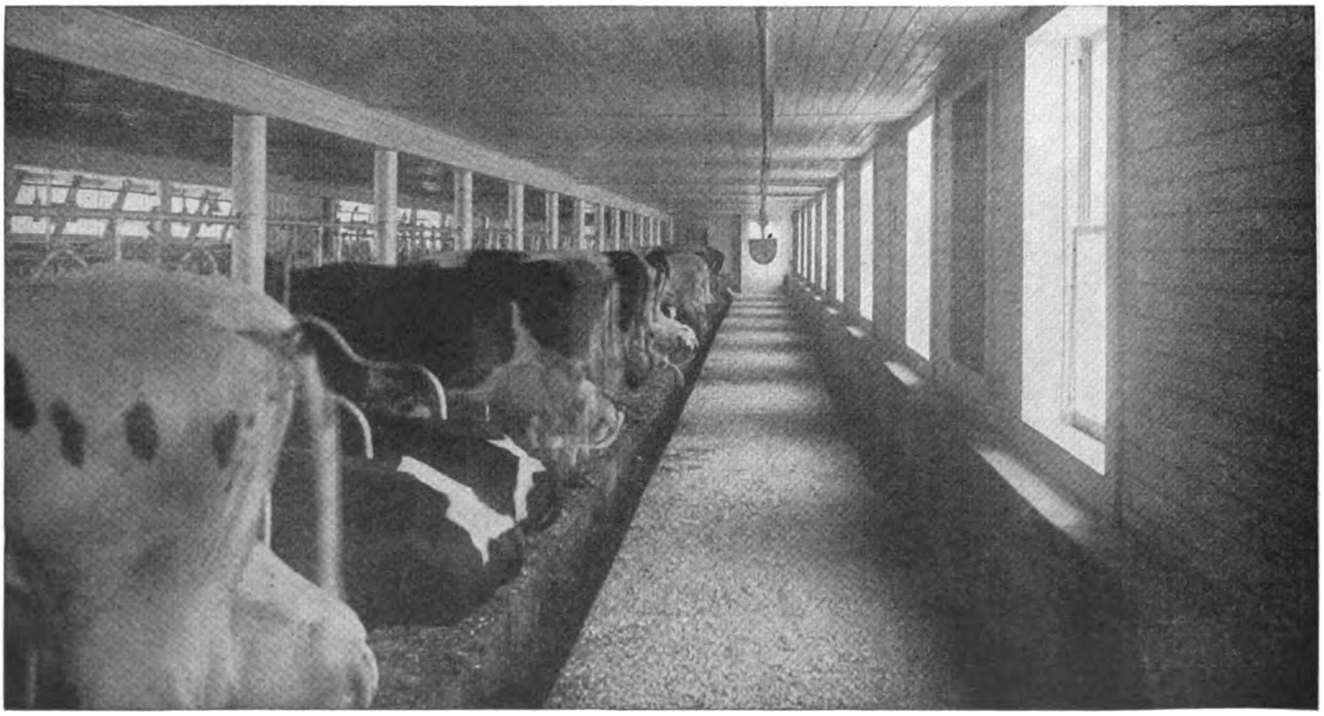
Building 26 by 14 feet containing 8 by 12-foot, double-wall ice storage compartment and 15 ft. 6 in. by 13 foot butter and creamery room. The sheltered loading platform is a great convenience. We can furnish complete set of blue-printed working plans and typewriten specifications for only $5.00 per set. When ordering, ask for Design No. A245L.



Floor Plan of Dairy and Ice House No. A245L.

In this plan, the ice and sawdust are put in at the back of the building. After the ice is packed for summer, this door is shut and made as near air tight as possible. When the ice is taken out during the summer, the door into the creamery is used.

The ice house is big enough to hold a block of ice 6 feet wide and 10 feet long, allowing a foot of sawdust all around the ice. It depends upon the size of the dairy whether this will be big enough or not. However, the partition can be moved to make the ice house 12 feet square or the building can be lengthened that much. The



Interior View of Modern Dairy Stable. Manure Carrier Runs on Overhead Tracks to All Parts; Sanitary Metal Stanchions Provided; Interior is Tight Ceiled

design is very neat and attractive, and the idea is a good one.

The refrigerator may be built in the corner of the ice house, as shown in the plan, or a separate box refrigerator may be built in the dairy room.

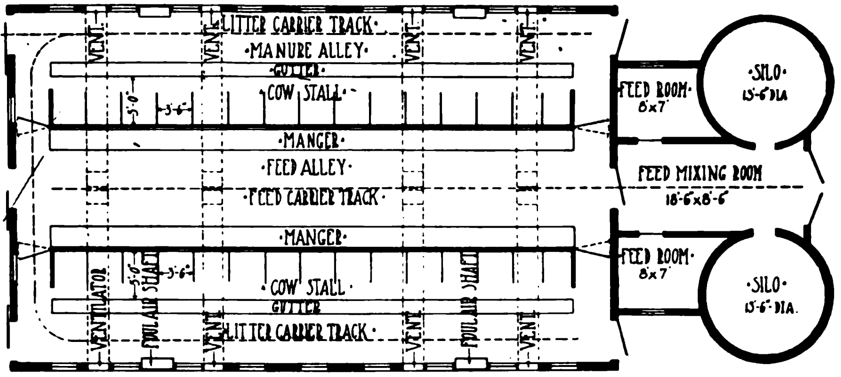
The separate refrigerator is the most satisfactory, but there is a little more work in filling it, however, this is compensated for by the saving in ice. The main thing is to have the ice to use when it is badly needed in hot weather.

Illinois Dairy Barn—Design A249L

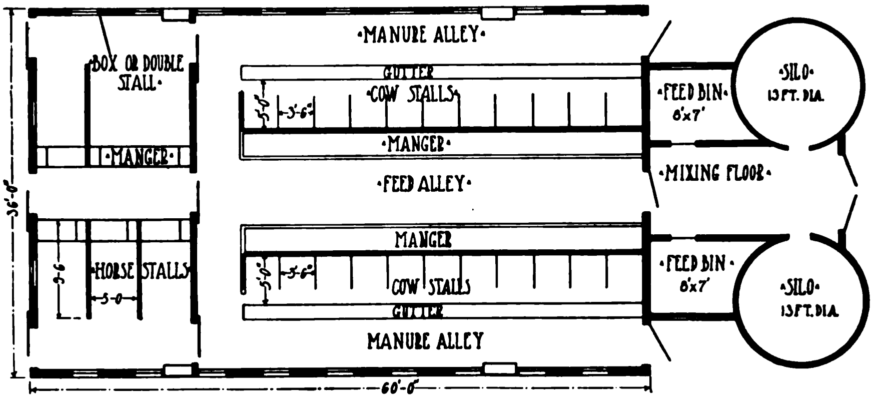
The arrangement of this barn shows the manner of stabling cows in the best dairy barns in Illinois. The cross-section of the floor shows what is considered the acme of perfection in dairy stable building.

The cows face each other across a feed alley 8 feet wide between the depressions for the manger. From one stall partition across the alley to the other stall partition is 12 feet. The floor in this feed alley is the same height as the top of the manger. The cows' front feet, when standing, are on a level with the bottom of the manger. The manger has a depth of 10 inches and is 2 feet 2 inches in width across the top. The stalls are 3 feet 6 inches wide and 5 feet long, measuring from the stanchions to the gutter. This is the ordinary length and width of a cow stall for full-sized cows.

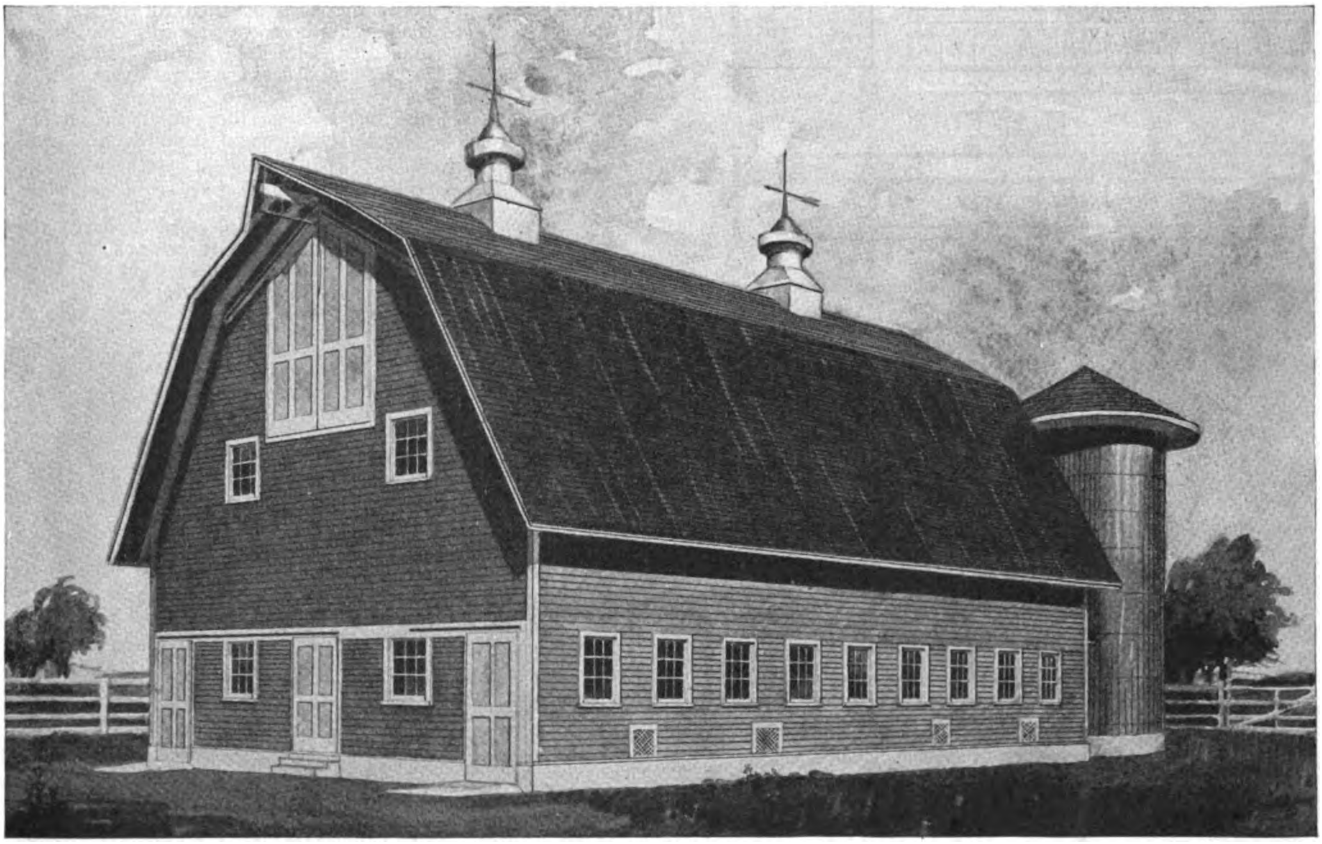
In practice it is seldom that a dairyman has enough small cows to make



Plan as Arranged for Cow Barn, No. A249L



Plan Arranged for Cow and Horse Stable, No. A249½L



. A MODEL MODERN FARM BUILDING WITH CHOICE OF FLOOR PLANS

This is a building with high gambrel roof, giving extra storage capacity. The ground floor is arranged for thirty cows in one plan and for twenty-two cows and six horses in the other. General dimensions, not including silo addition, are 60 by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. When ordering, ask for Design No. A249L for the cow barn and for A249½L for the cow and horse stable plan.

the special stall necessary. In this plan, however, four of the stalls are narrower, and these may be used for small cows or heifers. The gutter drops 6 inches from the stall floor. The gutter is 16 inches wide, and back of the gutter is an alley floor 5 feet in width. This alley floor is 4 inches lower than the stall floor, and only 2 inches above the bottom of the gutter.

The reasons given for the higher feeding floor and the lower alley floor at the rear are that the feed is kept up where it works down into the mangers easily. Also that looking at the cows from in front they appear to better advantage when you look down on them. On the other hand, milk cows appear better from the rear when standing a little lower than the cows.

Besides this, it is noticed that ventilation is easily handled when cows face in. Other reasons for this arrangement are that the coarse parts of roughage naturally gravitate down from the feeding alley to the stalls for bedding and from there to the gutter. The outside windows give better light at milking time than could be had by facing cows the other way.

Dairymen differ in their views about facing cows in or out, but it appears that a great many more good stables are built to head cows in than to face them out.

This stable is 36 feet wide, which accounts for the liberal alleyways. When carriers for feed and manure are used, these wide alleys are quite an advantage. While a litter carrier may be run through a narrower hallway, it is much more convenient and satisfactory to have plenty of room.

A different arrangement is given in floor plan A249½. There are four single horse stalls, and one double horse stall. The double stall would be more convenient to stand a pair of horses without taking off the neck yoke if the stall should be next to the door, but when it is made into a box stall it is right. In a stable where twenty-two cows are kept, it often happens that a box stall is a great convenience. It answers for a calf pen, for a hospital stall and it is handy for a mare and colt.

This horse department is partitioned off from the cow stable by a partition that runs to the ceiling. Also, the ceiling in the horse stable is a foot higher than the ceiling in the cow stable. There are convenient sliding doors over all openings, so it is easy to get through from one stable to the other.

The single horse stalls are 5 feet wide and the box stall is 10 by 13 feet when closed up to use as box stall. The cow stable is laid out to leave plenty of room in the alleys for feed and litter carriers.

In a modern stable like this, it is possible to work in a great many conveniences that the men will appreciate when doing the work. Dairy work lasts all day. It commences early in the morning and does not stop until late in the evening. Arrangements to save steps and hand labor a good many times a day will count up during the year.

Summer and Winter Dairy Stable—Design A238L

This is an Eastern cow stable. It has some features which are different from other good stables, some of which are well liked by everyone who has tried them out.

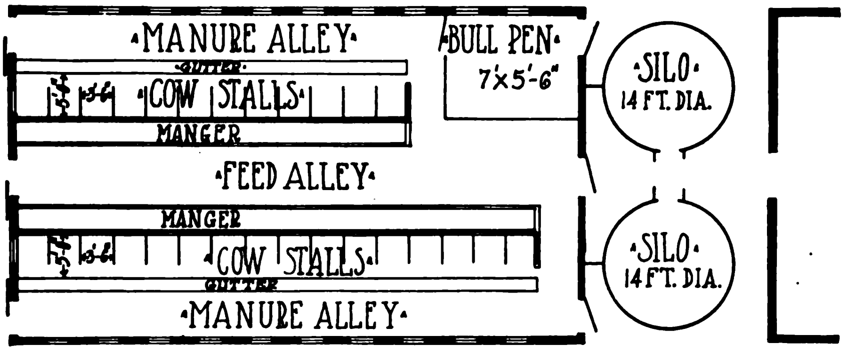
Where the winters are cold, as they are where dairy has been conducted to the best advantage, a stable really should be built for warmth in winter and clean, airy coolness in summer.

This design sometimes is fitted with outside blinds, painted dark green. This is for the purpose of shutting it up dark after the cows are milked in the morning in summer. When the blinds are shut the stable is so dark that flies will not stay in it. Dairymen have taken lessons from good housekeepers in this respect. Flies will crawl out of a very small crack to get from darkness to light. You can't shut flies out of a cow stable, that is, you can't shut them all out; but it is possible to shut up a stable like this so dark that they will all leave it between morning and evening milking hours.

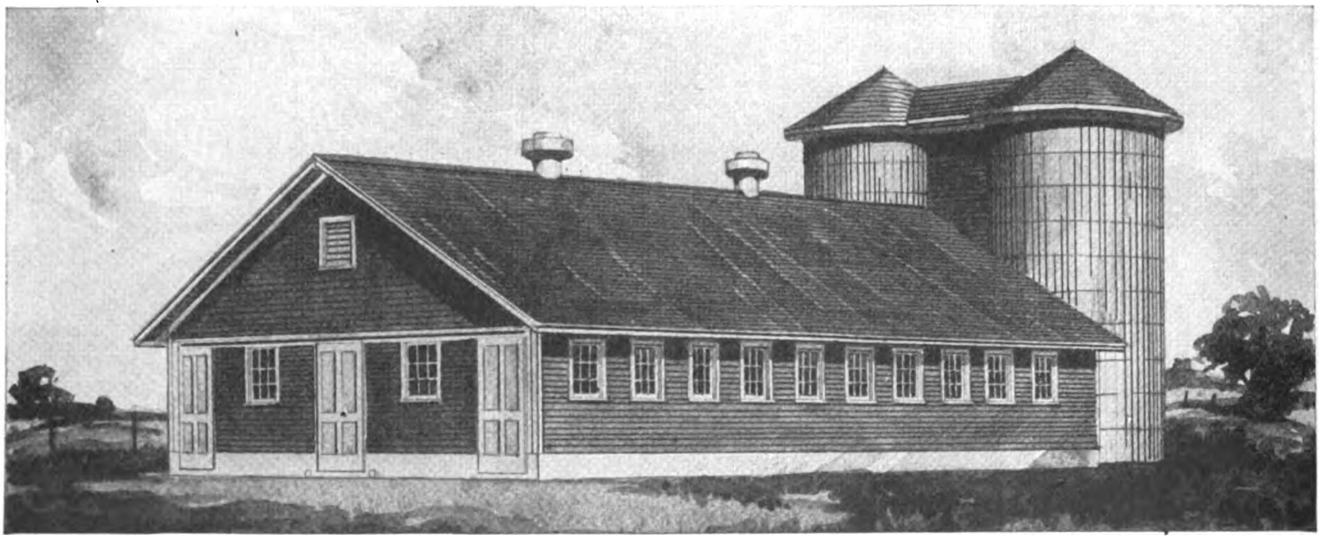
Of course, the cows will carry flies in with them when they are stabled in the afternoon, and this cannot be avoided very well. However, some New York dairymen have dark passageways leading to the stables, where a good many flies are brushed off by the attendant as the cows pass in. One dairyman experimented with stationary brushes in a dark passageway, which is an automatic way of brushing the flies off the cows as they enter the stable.

Eastern dairymen usually are well supplied with small hills or banks on which to arrange their stables, barnyards, etc. For this plan, a gently sloping bank, falling away towards the south or southeast, is preferable. The north is usually protected by a group of trees or high board fence.

During the last ten years stables



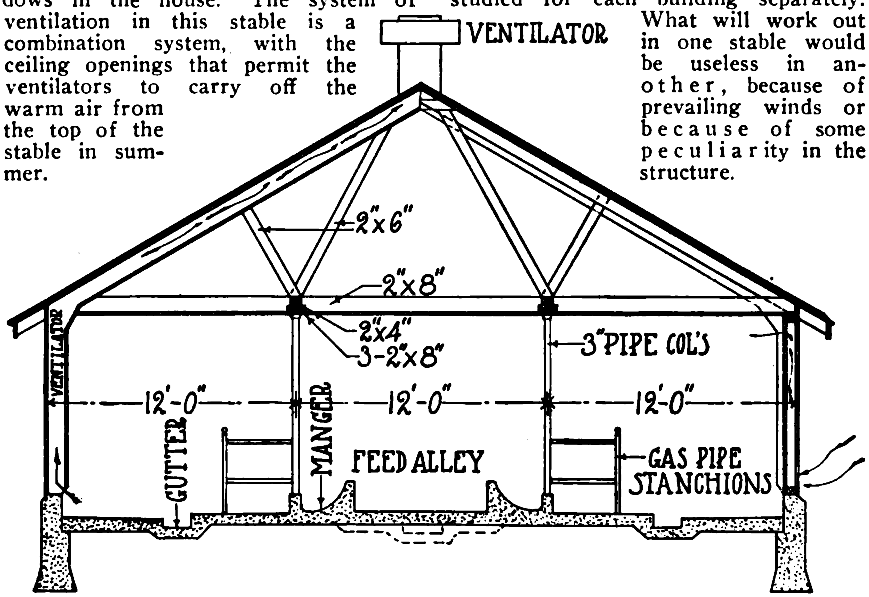
Floor Plan of Dairy Stable No. A238L



MODERN SANITARY DAIRY STABLE FOR TWENTY-EIGHT COWS—TWO 14-FOOT SILOS

Straightforward dairy stable design that gives plenty of sunshine and fresh air; the most practical form of sanitary dairy stable in connection with other farm buildings. Size, 62 by 36 feet. We can furnish complete set of blueprinted working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A238L.

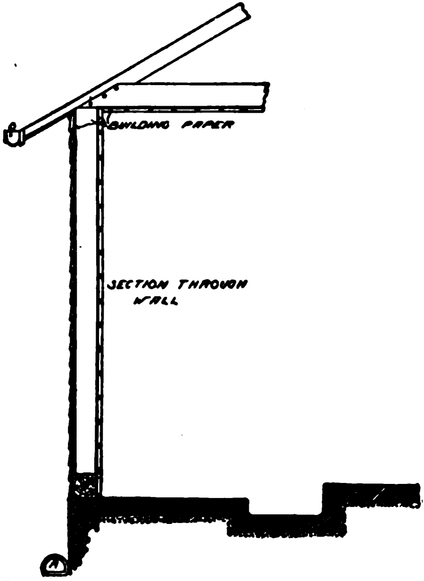
have grown in size and dimensions. Little cellar windows of meager sizes in lonesome connection have been displaced by two sash windows, as carefully made and adjusted as the windows in the house. The system of ventilation in this stable is a combination system, with the ceiling openings that permit the ventilators to carry off the warm air from the top of the stable in summer.



Cross-Section Through Modern Dairy Stable, No. A238L.

There may be built—in the concrete floor in the feed passageway—a central air duct to admit fresh air. Over this air duct is placed a wooden walk, built of 2 by 4 cross pieces, with the boards nailed on lengthwise. This leaves an opening between the 2 by 4 cross pieces for the entrance of air into the stable directly in front of the cows' noses.

According to the principle of warm air circulation, this arrangement is theoretically correct. Air is admitted in the center of the room that is properly proportioned and close enough built to prevent the influence of outside air currents. The cold air from outside is heated by the lungs and the body warmth of the cows. Warm air will rise to the ceiling and spread in every direction. As it loads up with impurities, and as its temperature is reduced, the air becomes heavier. As it reaches the outer walls its descends and is drawn through the outlet flues from near the floor behind the cows.

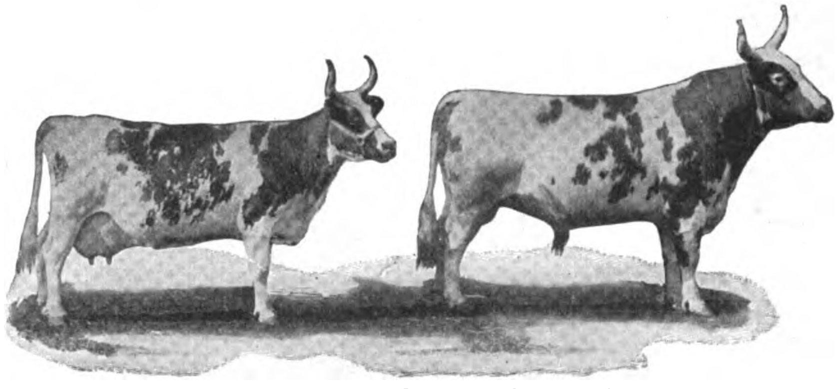


Detail of Side Wall and Floor Construction.

Practical stable ventilation must be studied for each building separately. What will work out in one stable would be useless in another, because of prevailing winds or because of some peculiarity in the structure.

This center horizontal air duct is worth a trial. Being made of concrete, it may be kept perfectly clean and, being open, it is less of a harbor for rats and mice than some of the wall air ducts that are placed in stables. This center walk is made in sections, so it may be lifted up and rested against the front of the manger while the stable is being swept with a broom or cleaned with a hose.

Any system of stable ventilation requires a temperature above 50 degrees F. to keep air in circulation. A temperature above 50 may be maintained in a good stable in zero weather by packing the cows close enough together. This is, of course, likely to lead to the old argument about the amount of air space required for animals, and this is a subject that has never been settled to the satisfaction of dairymen. But good cowmen like to have the air changed whether there is much or little to change. These men make their stable ceilings low and are particular to have a good-sized cow in each stall.



Prize Ayrshire Cow and Bull Owned at Redwood, Washington.

In building these stables in the East, dairymen are particular not to leave any ledges to hold dust. They use inside ceiling without beading and they paint the ceiling in such a way as to fill the cracks so far as possible, so the ceiling is smooth and airtight. For the same reason there are no window stools. There are no unnecessary projections anywhere on the inside of the stable. The same idea is followed in the stall partitions.

In this particular stable the only support to the ceiling is from the partition uprights between the cows which are cemented in the floor and fastened to the ceiling by screws through threaded plates. A loft over a stable like this is not used for any purpose except as an air space, and the air is changed by having a window in each gable. The silos are placed between the stable and storage barn, with room for a feed carrier to pass through; this carrier track extends the whole length of the cow stable and runs far enough into the storage barn to load the litter carrier.

The value of this arrangement may be better understood by the study of one fact—that north of the 42nd parallel of latitude there is an average of only six weeks of good pasture. There are droughts sandwiched in between late spring and early fall frost, so that dairymen are obliged to supply manger feed for ten or eleven months. In fact, some of the best dairymen don't depend on pasture, except to have a run for the cows for exercise, fresh air and general health. Of course, they want cows to get some picking, and this is necessary to induce the cows to travel about. But when it comes to actual feeding, the stable is depended upon in summer as well as winter. The storage of silage and the growing of alfalfa have brought about this change.

The old plan of growing soiling crops is not carried on to any great extent; labor is too expensive. Silage and alfalfa are better and cheaper. At the same time, good cows appreciate a feed once a day of green stuff. It may be clover, oats, succotash, alfalfa, or any other good forage crops but this feed is given as an appetizer more than for the actual returns in milk derived from it.

Rabbits

It is doubtful whether rabbits can be considered of any value to farmers. They make interesting pets for children, and it is possible to raise rabbits for the table. But the same amount of time and energy spent with almost any good breed of domestic animal will bring ten times better results.

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

Combined Barn and Covered Barnyard—Design A247L

A great many dairymen like to have a covered barnyard for the cows to exercise in, and some go so far as to keep the cows in this covered barnyard both night and day in winter, just stabling them long enough to milk and feed grain and silage. In some parts of the country the covered barnyard is growing in favor.

The plan (A247L) is designed for a bank sloping to the south. There is a good root cellar in the bank next to the building on the north side, and the large roof surface is utilized to furnish water for the cistern. A cistern filter is placed inside the building, so it won't freeze. To have nice cistern water, it is best to run it through a filter.

The feed racks in the covered barnyard are made removable, to facilitate driving through at cleaning time. Mild days in winter the manure spreader is brought in at one door, loaded and taken out at the other. The racks are placed in the center under the feed chutes, so the roughage from the storage above made be dropped into them with as little work as possible. With a cistern and a windmill, the water tank is kept well supplied all the time, so the cows may run to it when they want to.

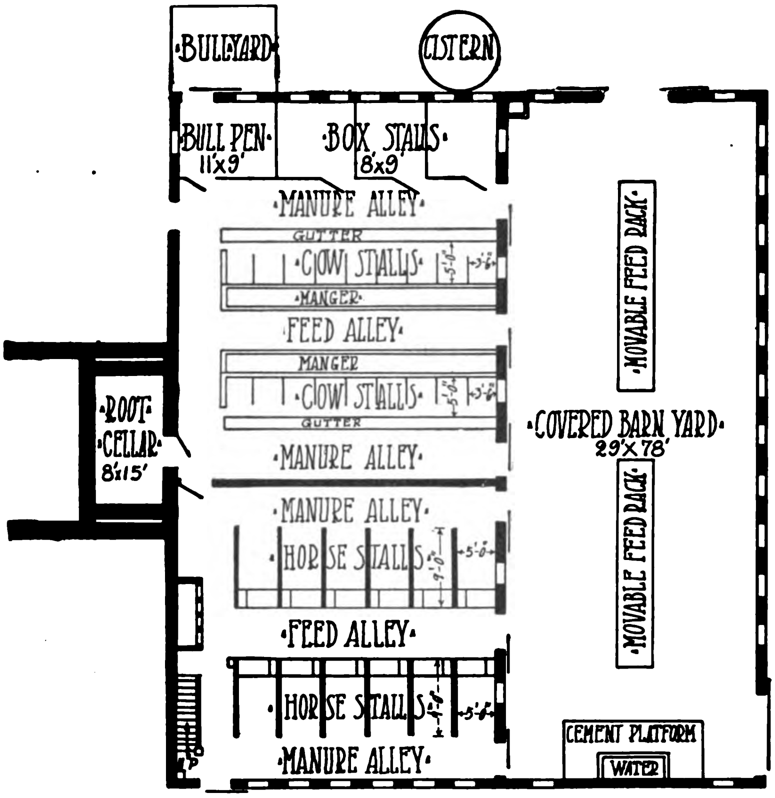
The stable floor should be about 2 feet higher than the floor in the covered barnyard. This gives an 8-foot ceiling for the stable and a 10-foot ceiling in the yard.

The arrangement is entirely different from the ordinary dairy barn and fits the class of men who do business differently. Dairymen are not alike in their methods or ideas; each one must work on his own plan. Theoretically, cows are better for having their freedom, and it would be difficult to find any practical objection. Even the work is not increased if the management is what it should be.

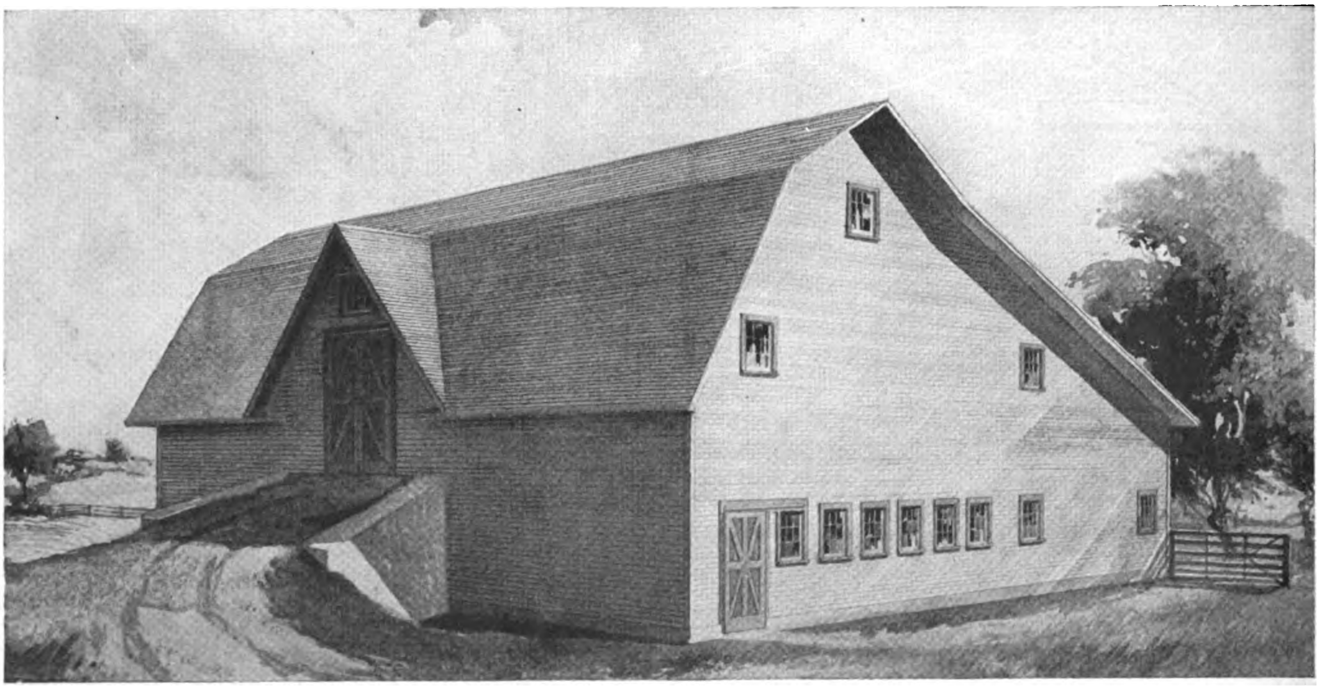
There are some splendid features about this barn. The root cellar is so situated that it may be filled from the top and the roots taken out through a door on a level with the stable floor.

Sixty by Thirty-Six Cow Barn—Design A273L

Thirty cows, fifteen on a side, is the capacity of this dairy stable. It is a plain, straight-way dairy stable with the most approved concrete floor, alleyways of good width and passageways for entrance and egress in every direction.

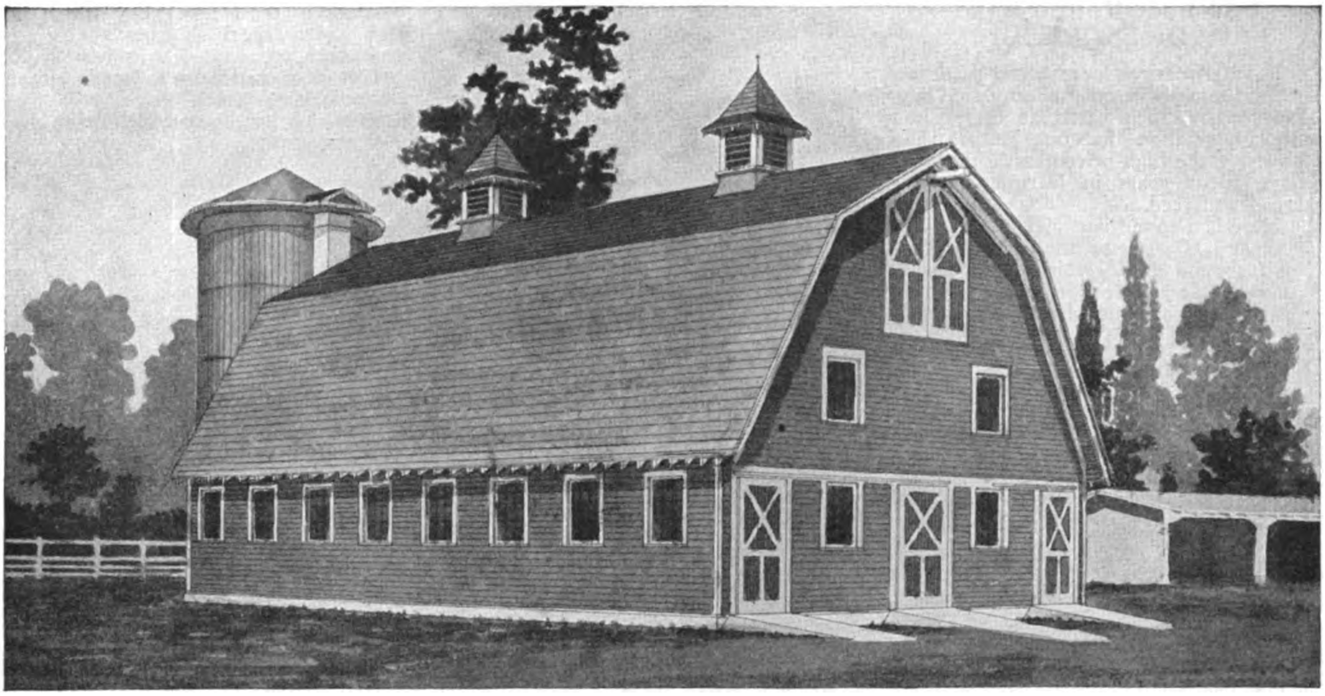


Ground Floor Plan of Barn with Covered Barnyard, No. A247L.



COMBINED BARN AND COVERED BARNYARD

An Unusual Barn Design That Has Many Good Points. A bridge barn measuring 68 by 80 ft. Root cellar under bridge is filled from trap door just inside the big doors. In the horse part are stalls for twelve horses.. The cow stable provides stanchions for eighteen cows. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. When ordering, ask for Design No. A247L.



SIXTY-FOOT DAIRY BARN WITH SILO

A modern gambrel-roof barn for 30 cows; 13 foot silo is at end of central feed alley. Cows are stanchioned in two rows, facing in. Size of barn 60 by 36 feet. We can furnish complete set of blue-printed working plans and type-written specifications for only $8.00 per set. When ordering, ask for Design No. A273L.

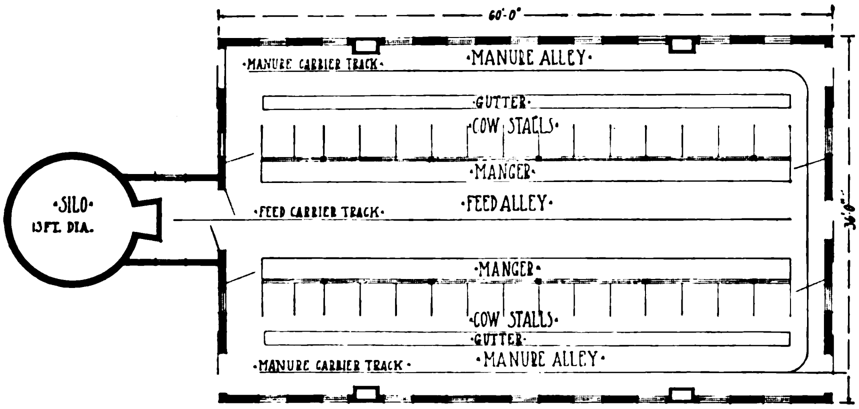
It is customary in some parts of the country to make the stalls all one size, 3 feet 6 inches wide, with 5 feet between the manger and gutter.

In other parts of the country it is customary in a long stable to place the manger 4 feet from the gutter at one end, and 5 feet 6 inches from the gutter at the other end to accommodate the length of floor to the different sized cows. There are stanchions made which may be adjusted to take up or lengthen a stall a few inches. Some stables are built with stalls 4 feet 6 inches long on one side and the other side of the stable has all 5-foot stalls.

It seems necessary to have a variation of about 6 inches, but custom seems to vary a good deal with the different localities.

This dairy barn was designed for a section where the winters are rather mild and the farmer has considerable shed and yard room so the cows can spend a good deal of time in the yards and under the sheds during the day.

The end of the shed shown in the illustration is a hint of what the yards contain. The sheds front the south or the east to take the advantage of the morning sun and also to take a different kind of advantage of the north and west winds.

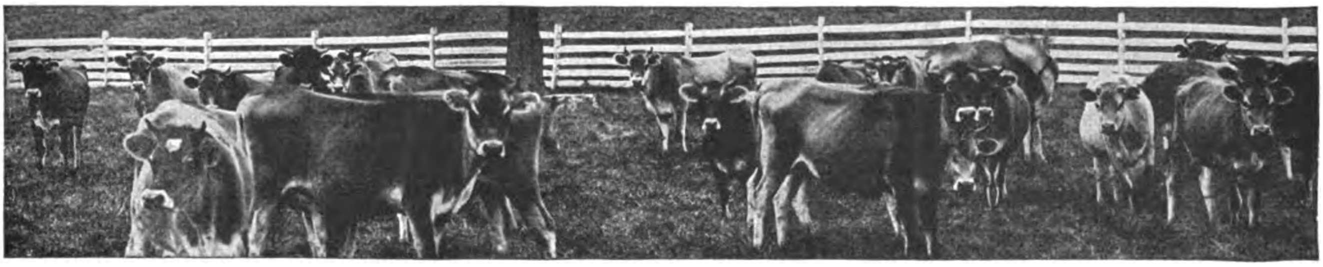


Ground Floor Plan of Dairy Barn No. 273L.

The laying out of barnyards and the building of stable sheds to suit the business, requires considerable close study to make everything fit in to the best possible advantage. What is suitable on one farm would be out of place on another, because while the business may be similar, it is conducted along different lines.

The climate also has a good deal to do with the proper planning and building of dairy stables and stock sheds. Not that the stables themselves are much different, this design is good for the north and it is good for the south, but the manner of handling cows and the dairy adjuncts differ according to the environment and the disposition of the owner.

According to a New York State botanist, there are 215 varieties of edible mushrooms.



Thoroughbred Jersey Heifers—Beautiful as Young Deer—on the Hartman Farm near Dayton, Ohio.

A 90-Foot Round Barn—Design A254L

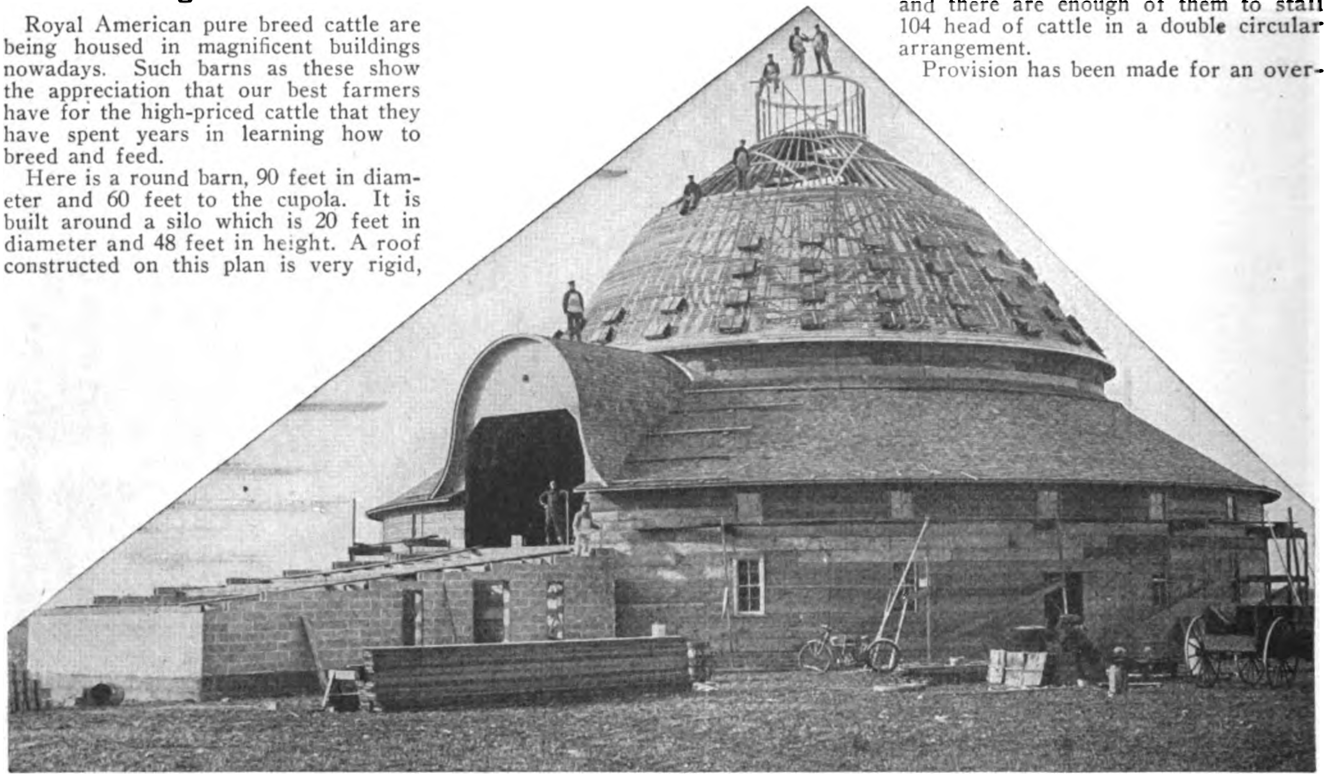
Royal American pure breed cattle are being housed in magnificent buildings nowadays. Such barns as these show the appreciation that our best farmers have for the high-priced cattle that they have spent years in learning how to breed and feed.

Here is a round barn, 90 feet in diameter and 60 feet to the cupola. It is built around a silo which is 20 feet in diameter and 48 feet in height. A roof constructed on this plan is very rigid, each rafter and each sheathing board forms a tie to resist wind pressure or any other strain. The roof is self-supporting without cross bracing, which leaves an immense mow room between the silo and the circumference of the building.

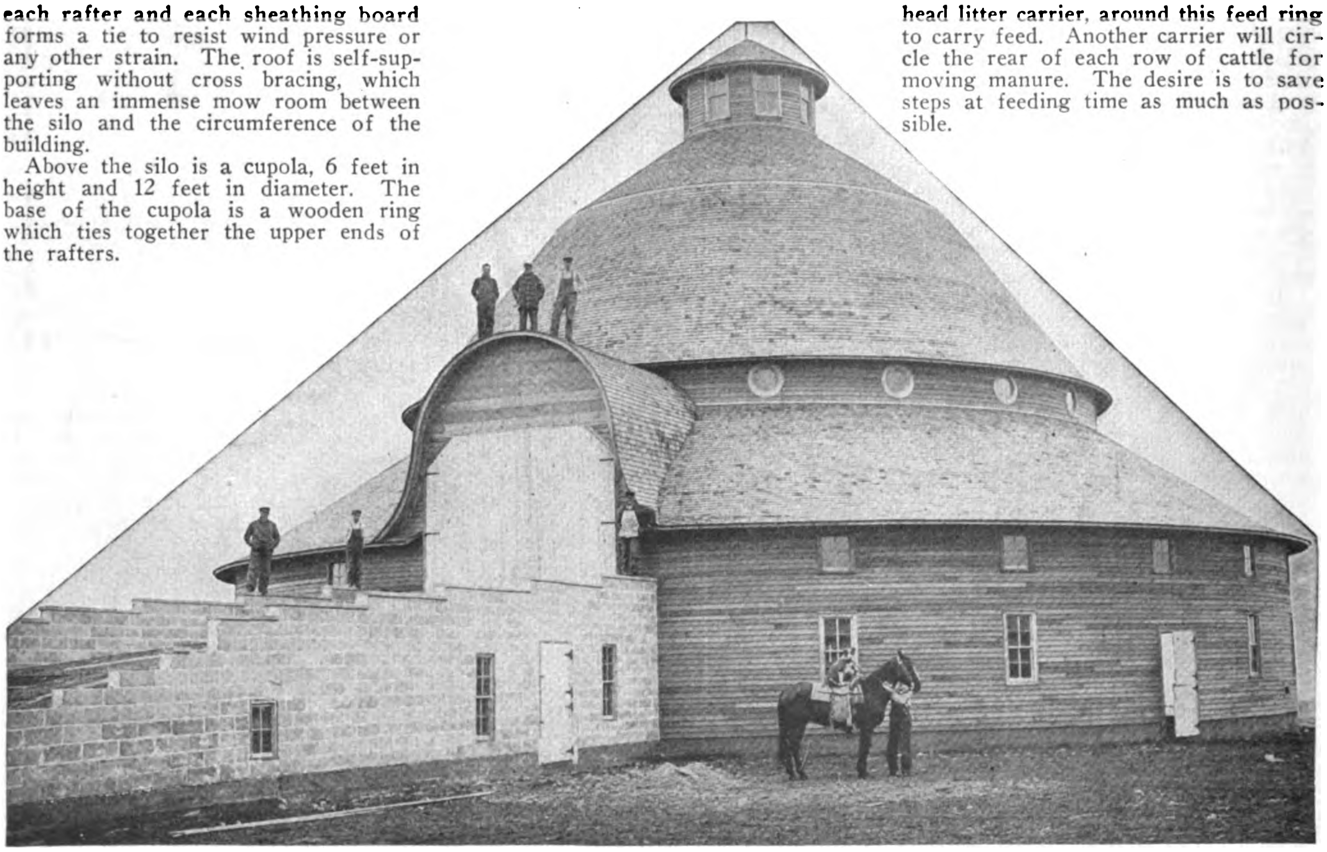
Above the silo is a cupola, 6 feet in height and 12 feet in diameter. The base of the cupola is a wooden ring which ties together the upper ends of the rafters.

The interior arrangement provides for two rows of cattle in stanchions heading in to a feed alley which is 6 feet wide. Steel stanchions are used, and there are enough of them to stall 104 head of cattle in a double circular arrangement.

Provision has been made for an overhead litter carrier, around this feed ring to carry feed. Another carrier will circle the rear of each row of cattle for moving manure. The desire is to save steps at feeding time as much as possible.



Ninety foot round barn, No. A254L, in process of construction in Iowa. Roof is sheathed with ⅞ by 2-inch Strips. Horse stable is concrete block section under bridge to hay mow floor.



NINETY-FOOT ROUND DAIRY BARN

A unique barn design of striking appearance and large capacity, possessing many interesting features. On the ground floor are stanchions for 104 cows. Bridge floor contains corn crib, grain bins and hay mow. Twenty-foot silo 48 feet high occupies center of barn. Price of blue-printed working plans and typewritten specifications for this design No. 254L, on application.

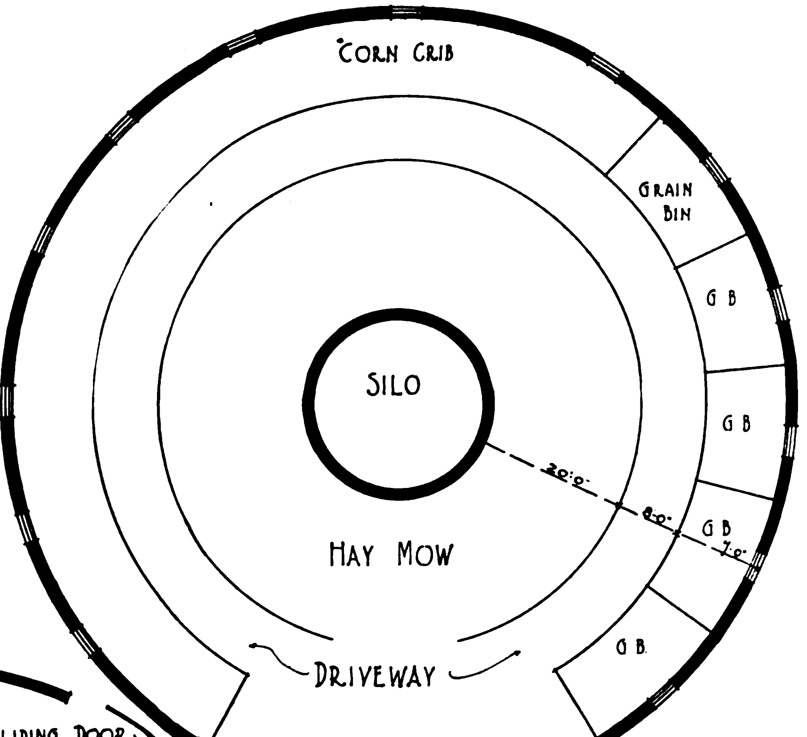
Over the stable, next to the haymow, there is a driveway. The outer circle is partitioned off into grain bins and corn cribs. Under the approach to the barn is a small horse stable, as the owner did not care to have horses in the cattle barn. This stables eight head of horses.

It is intended later to have carriers on tracks to circle the upper floor. Carriers have been found very useful in smaller buildings than this, but they are such great labor savers that they are absolutely a necessity in a barn of this size. While this is a whale of a barn, it is so well planned that the labor of feeding and caring for stock is less than when the animals are scattered around in feed lots, and the gains, because of proper housing, are very satisfactory.

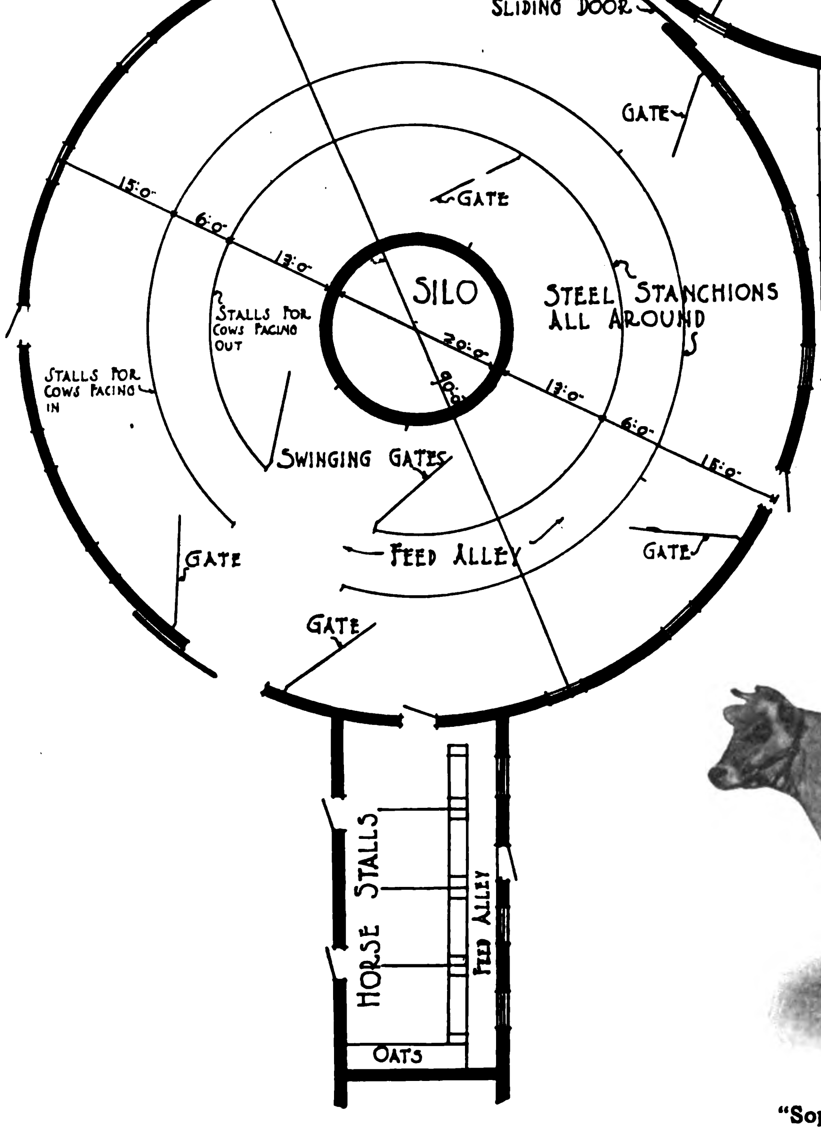
The lumber dealer can give a close estimate on the cost of materials for a barn like this.

"Do you know," said the successful merchant pompously, "that I began life as a barefoot boy?"

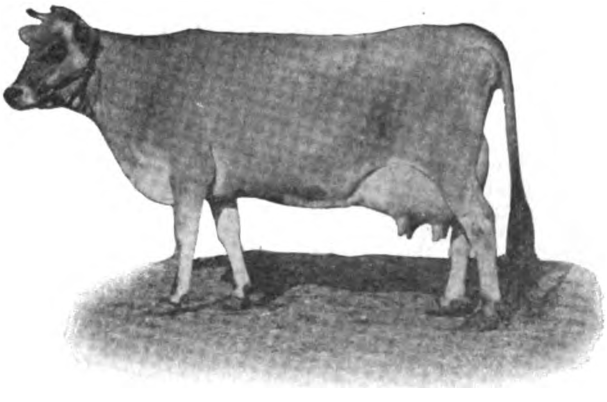
"Well," said his clerk, "I wasn't born with shoes on, either."



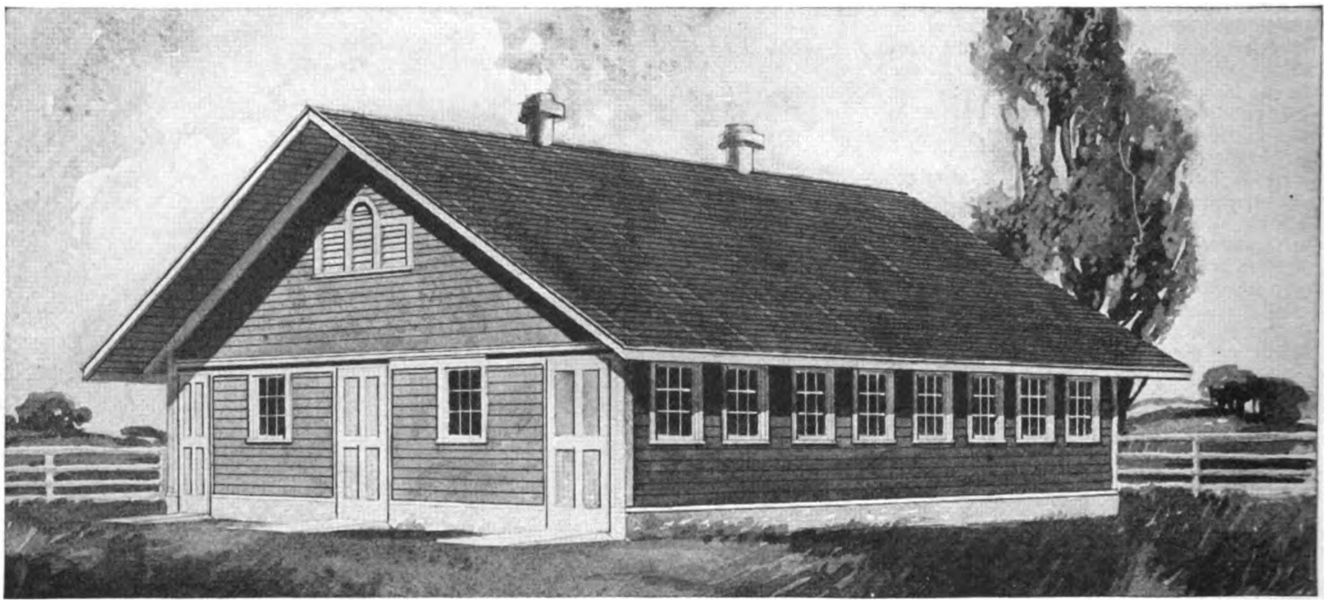
Second Floor Plan Showing Grain Bins, Haymow and Farm Machinery Storage Space.



Ground Floor Plan of 90-Foot Round Barn No. A254L, Showing Cow and Horse Stables.

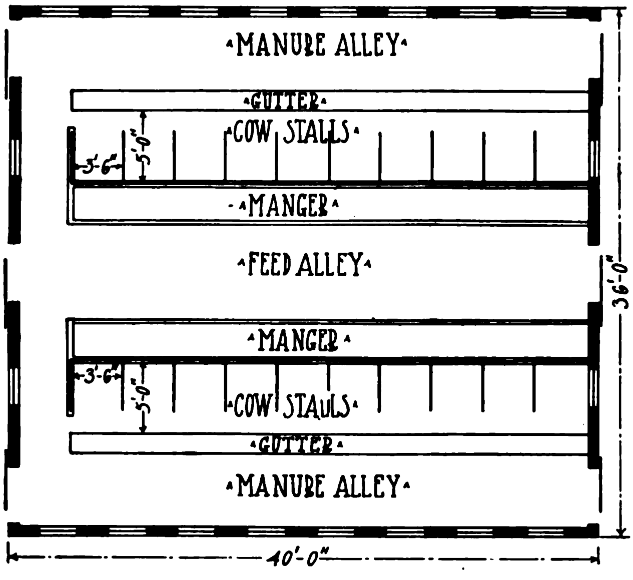


"Sophie 19th of Hood Farm, which holds the Jersey cow record for butter-fat production—999 pounds 2.2 ounces in 365 days."



MODERN SANITARY GABLE-ROOF COW STABLE

A sensible design 40 by 36 feet, to stable 20 cows. Concrete floor is molded to form alleyways, gutters, stalls, mangers and feed alley, all in one piece. Extra well-lighted and ventilated superstructure provided. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design A277L.



Floor Plan of Cow Stable No. A277L

Gable Roof Cow Stable —Design A277L

This design provides for a concrete cow stable floor with a lightly constructed sanitary building placed over it.

One way to put up a building of this kind is to make the floor with a retaining wall to go below frost. The concrete floor work in this case is made almost the same as a sidewalk. The ground is carefully graded according to the detail plan. It is then covered with cinders in the usual way, pounded down and trued to grade by testing with a leveling straight edge.

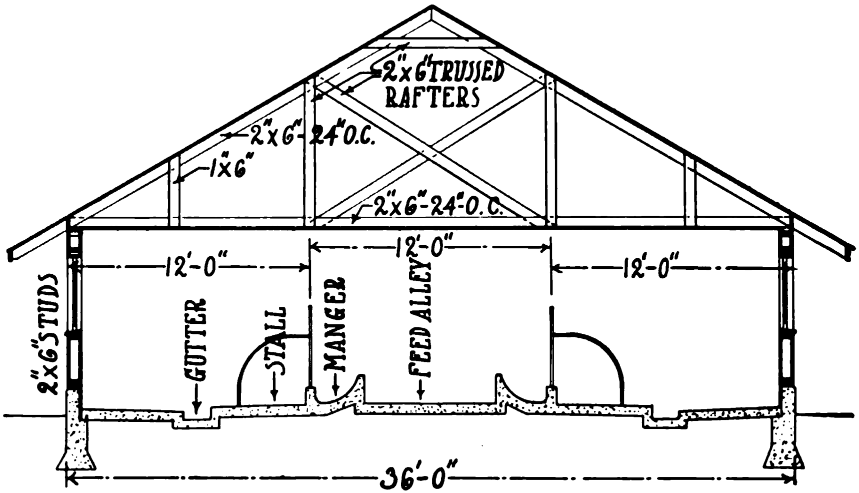
On top of this foundation, concrete, mixed as for sidewalks, is spread between 2 by 4's, staked down to define the divisions, and a surface mortar is applied with a trowel as soon as the coarse filling of concrete takes on its initial set.

A cow stable floor is a little more particular than sidewalk construction so that the adhesion of the surface coat must be obtained with greater care.

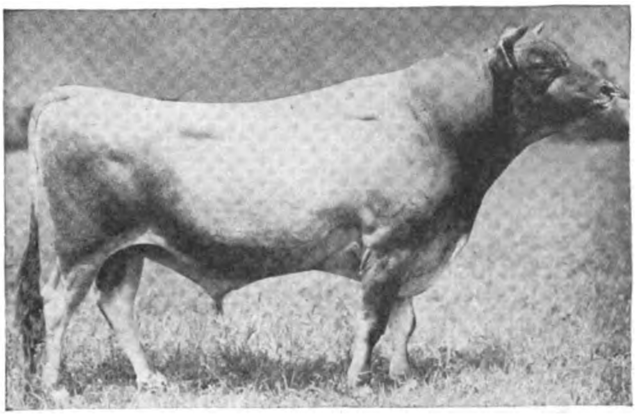
Sidewalk flags usually are separated by a strip of tarred roofing. In building a stable floor this is omitted for the reason that there is very little change of temperature in a cow stable, and it is not necessary to make provision for expansion and contraction, also stable blocks, if built close together, will prevent the liquids from seeping through.

The level floors of the alleys and the sloping stable floors are leveled and graded as per floor plan details, by lining up the wooden forms. Wooden forms for concrete work must have straight edges on top. If they are dressed smooth and jointed it is easier to do a good job.

In starting to lay a floor, like this or any other stable floor, it is much better to let the foreman work alone for a day or two in laying out the job. The owner always loses when he permits hurry-up work the first day. It seems necessary to fool away about so much time in order to get started right. If the owner doesn't get nervous he will get better work and will be better satisfied when the job is finished. It is better to let the foreman get acquainted with the proposition at his leisure, without several idle hands standing around waiting to be set to work.



Section Through Sanitary Gable-Roof Cow Stable No. A277L



"Pogo's Ninth," Champion Jersey Bull, Owned at Lowell, Mass.

The stable building above the floor is of less importance, but it should be made tight enough so the proper temperature may be maintained in the winter time, otherwise the ventilators cannot work properly.

In putting up a building the expense is very little more in making it right, and it is so much better to be particular.

A feature of this little stable that will appeal to dairy men is the quantity of light. By actual count, there is a window for each row. It may be noticed that cow stables are becoming lighter every year. The old fashioned plan of tying cows up in a dark dungeon, built into some side hill, has gone out of fashion, especially in the vicinity of large cities, where dairy inspectors have a little authority and a good deal of influence. The new stables show a great deal of glass area and the old stables are being cut to pieces to accommodate new windows.

This little twenty-cow stable is easy of access from any direction. There are three straight away passages through the stable with sliding doors at each end. The general plan is worked out on the principle of building farm buildings for special purposes, and to adapt them for the purposes intended.

Concrete Dairy Stable—Design A264L

A storage barn over a concrete or stone wall is illustrated in this plan. The stable is modern in every respect, according to the most approved plans worked out through years of dairy stable experience.

The stalls are arranged to head the cows out, a plan that some dairy men prefer because they want to drive the manure spreader right through the stable every day to remove the fresh manure. They like this plan because it gives more room at milking time, and they like the looks of the cows standing in a row on either side of the alley so they may be seen to advantage.

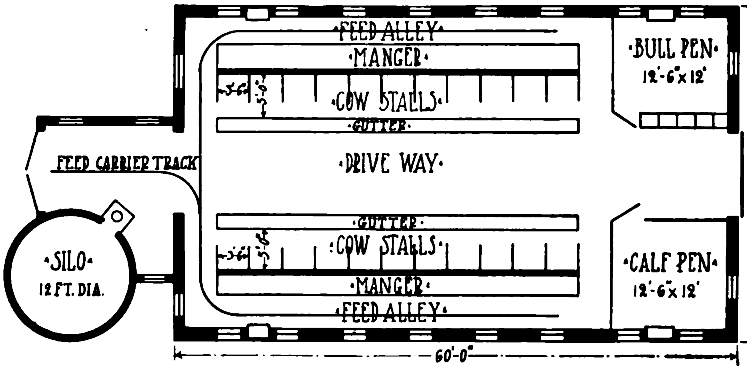
Special attention has been paid to ventilation. The intake and outtake of air is built according to the King system of ventilation—one of the most practical plans of changing the air in a cow stable in the winter time.

A concrete or stone wall with a concrete floor offers the advantage of being warm in the winter and cool in summer. Where concrete construction is understood, there are a great many such walls. In some sections, where stone is plentiful, there are a great many stone walls. They are solid in appearance and solid in fact. They are fire proof, and if good sand may be easily had, the expense is not a great deal more than good wooden construction.

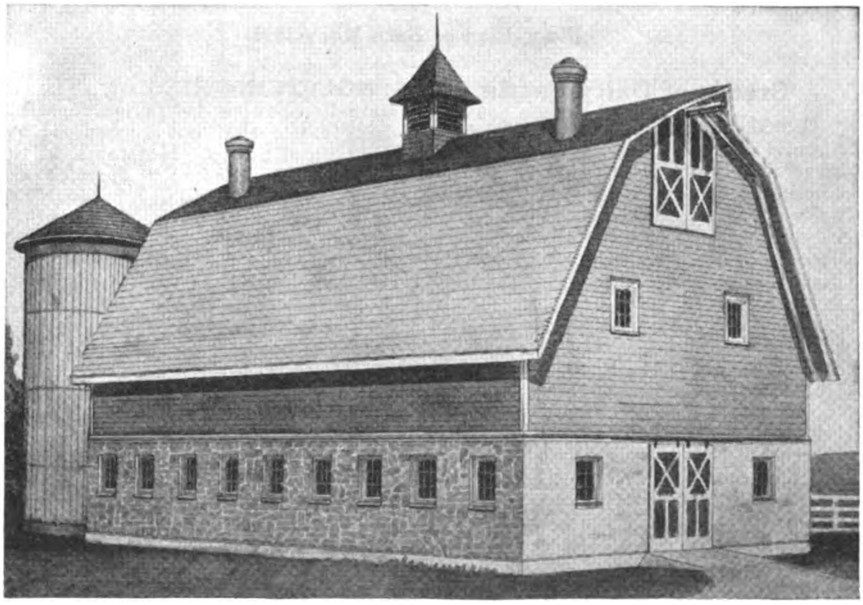
Above the stable, however, a wooden building is preferred. Anybody can build a wall 8 or 9 feet high, but when the wall is run up, then special scaffolding and hoisting machinery complicate the work. There is no objection to a concrete or stone wall for a dairy stable, provided that attention is given to ventilation and provided that the wall is not used to hold back a bank of earth. A stable wall is intended to keep cows in condition to yield a large supply of milk.

The concrete or stone walls are porous enough to let moisture through when the earth is piled against them. Cows want plenty of moisture, but they want it through the watering trough and not through the air. Proper sanitation demands that stable air shall be as pure as possible and as free as possible from excess moisture.

It is only recently that farmers have discovered that windows may be placed in a stone wall or a cement wall and that the cost of building is no greater because the cost of the frames and sash is saved in cubic wall measurement.



Floor Plan of Barn No. A264L



SIXTY BY THIIRTY-SIX FOOT BASEMENT BARN

Stable floor has walls of concrete or stone, making a warm, durable barn. Twenty-two cows are arranged in stalls facing out; 12-foot silo holds the winter pasture. Size of barn, 60 by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design No. A264L.

Fifty-Six Foot Dairy Barn —Design A259L

A good sized cow barn is offered in this design.

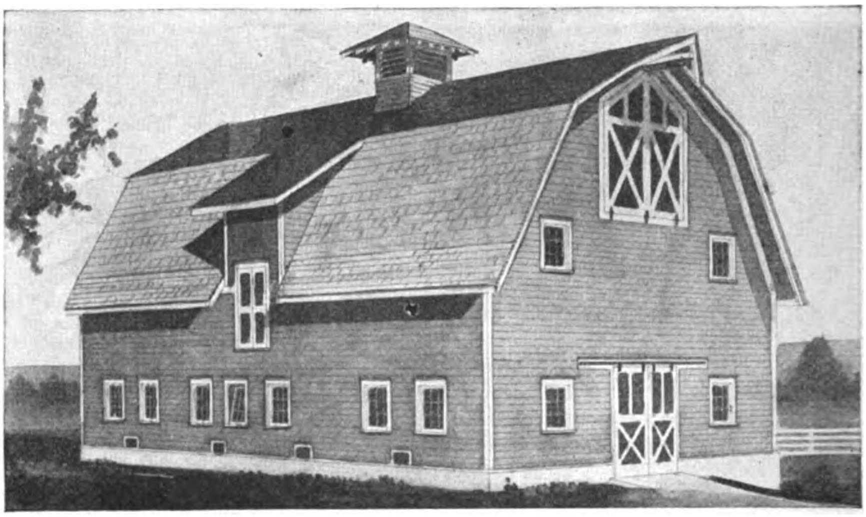
The floor is of concrete, with the most approved mangers, gutters, and manure alleys for the stabling of dairy cows. There is a driveway through the center for supplying roughage for feed and straw for bedding.

It is desirable in all stables as large as this to have several box stalls, because dairy men always have use for them.

Provision is made for removing the manure and litter to the manure carrier every day, as this has been proven to be the best as well as the most economical way of disposing of the manure.

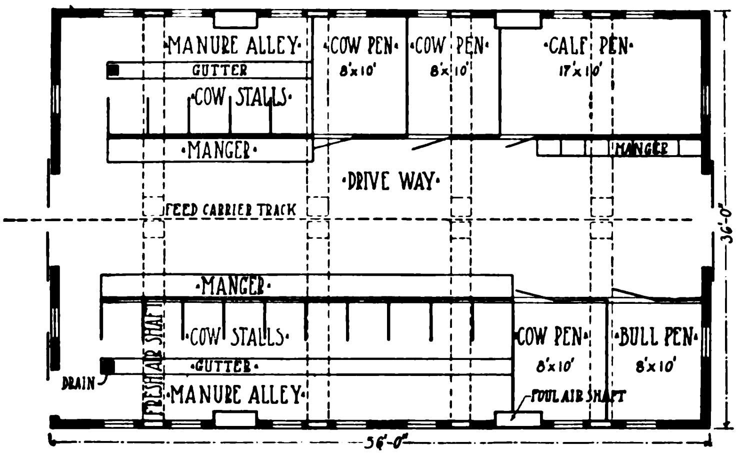
Dairy farmers are learning the value of cow stable manure, and they are making so much better use of it than they ever did before that manure conveniences around the stable are greatly appreciated.

A good stable with a manure carrier and a manure spreader properly handled will increase the grain yield of the farm each year, while the dairy is paying all the expenses of running the farm.

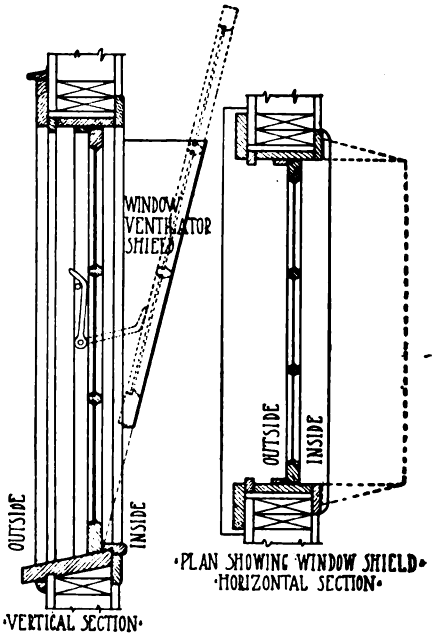


LARGE GAMBREL-ROOF COW BARN

A 56 by 36 foot cow barn designed with extra conveniences and extra pens. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design No. A259L.



Floor Plan of Barn No. A259L



Details of Simple Window Ventilating Arrangement

Breeds of Dairy Cattle

JERSEY. Jersey cattle are very popular in America. The breed is known in its greatest purity in the Channel Islands, where it is protected by very stringent laws. The Jersey is one of the most popular dairy breeds. The cows, and especially the heifers, are very pretty with their graceful necks and deer-like heads. Jersey cattle are distributed all over the United States.

GUERNSEY. Like the Jersey, the Guernsey cattle have their home in the Channel Islands, mainly on the Island of Guernsey. The milk of the Guernsey is somewhat more yellow in appearance, and advocates of this breed claim that the yellow color carries with it a flavor that is especially agreeable.

AYRSHIRE. The Ayrshire is the favorite Scotch breed of dairy cattle. It is lighter than some of the other dairy breeds, because it has made its home for a great many generations on the hills of Scotland, where the youngsters grow up scrambling over the rocks in search of herbage. The Ayrshires are especially valuable as dairy cattle in hilly countries.

HOLSTEIN-FRIESIAN. The Holstein-Friesian is a Dutch breed of dairy cattle that has spread all over the United States. Holsteins, as they are usually called, are heavier than any other strictly dairy breed. They came originally from the lowlands, where pasture was abundant, and this always has a tendency to increase the size. Special attention has been given to the milking qualities for a great many years, until the Holsteins hold the record for quantity. They also hold a great many records for value of both butter-fat and solids.

DUTCH BELTED. This breed of dairy cattle gets its name from the pecuiar marking, a white band or belt around the black body being the principal color characteristic. It is a very old breed, propagated a long time ago by the nobility of the Netherlands.

FRENCH CANADIAN CATTLE. This is an old breed, supposed to have been taken originally from France to Quebec. The cows are small in size, and give a fair quantity of very rich milk. In appearance, the French Canadian cattle somewhat resemble the Jersey.

KERRY CATTLE. This is an interesting breed from the west of Ireland. It is known in Ireland as the "poor man's cow." The color is usually black. It is a small breed, active and capable of sustaining life where food is not very plentiful. As a milk producer it ranks high when feed is abundant. Kerry and Dexter cattle are near relatives.

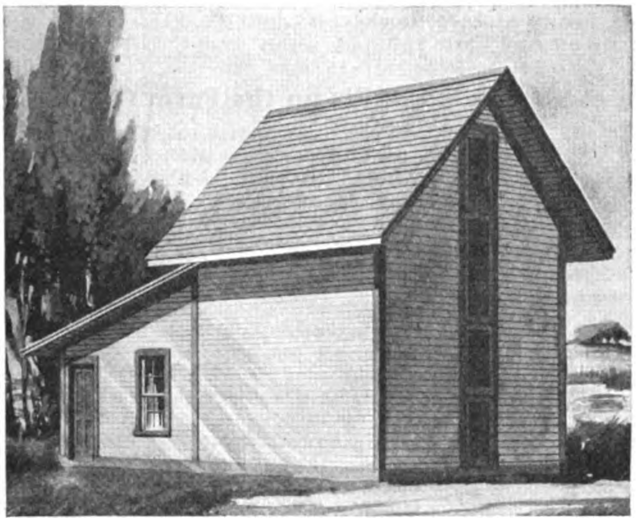
DUAL-PURPOSE CATTLE. By selection, certain animals of different breeds have been carefully bred with both milking and beef characteristics. A great many Shorthorn cows of large size give a large quantity of milk, besides keeping in fair condition. When dried off, they may be easily fattened for beef.

RED POLLED CATTLE. This is a dual-purpose breed that has been more or less successful. Advocates of the Red Polled are very enthusiastic. Individuals of this breed have certainly made good records. Cows weigh 1,100 to 1,300; bulls, 1,600 to 2,000 pounds.

DEVON CATTLE. As the name indicates, the Devon breed came from the country of Devonshire in England. The color is red. These cattle make excellent beef, although they are not large when considered from a beef standpoint. They also rank well as milk producers. There are not many Devon cattle in America.

BROWN-SWISS CATTLE. This is another dual-purpose breed that is attracting a good deal of attention in certain sections of the country. In appearance, the Brown-Swiss looks a good deal like an extra large Jersey. It makes fine beef. There are individual cows of this breed that give large quantities of milk.

Dairy Ice House—Design A246L



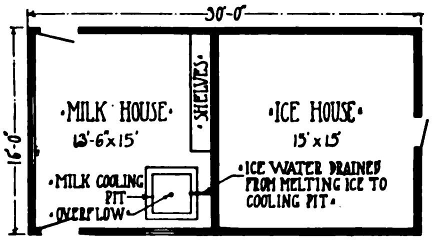
COMBINED ICE HOUSE AND MILK HOUSE

An ingenious arrangement which makes use of the ice water that comes away from the ice house for cooling the milk in the milk house. Size of building 30 by 16 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design No. A246L.

This design shows an ice house that holds a cube of ice 16 feet across. This ice house is built in connection with a dairy. The dairy is built to the south, which protects the south side of the ice house from the sun. In this plan the dairy is a small, one-story affair, but it is well built for handling milk. The floor is of concrete and in one corner next to the ice house there is a cold water pit to hold cans of milk for cooling. The water in this cooling pit is kept cold by the drip from the melting ice in the ice house. It is a practical way of utilizing the waste from the ice house, which is another by-product.

The first principle in keeping ice is to provide drainage. Where a farmer has trouble with ice melting too fast in the ice house, the first symptom to analyze is the drainage. If water accumulates around the ice, it will melt rapidly. In this plan, cinders are pounded into the excavation and a floor of concrete is laid over the cinders, with gutters leading to the outlet, as shown in the drawing. Over this concrete floor are placed cinders that have been carefully screened. This layer is made 2 to 4 inches deep, in order to level up the incline of the cement floor.

Over the cinders is a layer of straw, and over the straw is sawdust. The straw prevents sawdust from working down to clog up the spaces between the cinders; an inch or two of straw is sufficient for this purpose. The straw should be long length, clean and carefully laid. Between the straw and the ice is 12 or 16 inches of sawdust.



Floor Plan of Ice and Milk House No. A246L

This makes a floor that will not be affected by frost; it will provide drainage for the ice and it will not clog. The material above the drain corrugations must be taken out and renewed each year before the ice house is filled. Sometimes ice is left over, and it is a temptation to build onto it. But this is taking unnecessary chances. It is better to clear the whole thing out and commence again.

the dairy cooling pit is 3 by 3 feet by 2 feet in depth. The drain from this is so constructed that the water remains at the same height. The drain and drain plug provide for this. In making the pit, the discharge pipe is laid in the cement, so that the pipe comes within about 2 inches of the floor of the pit. Above the elbow is a nipple that is screwed into the flange, and the flange is imbedded into the cement. This is carefully done to prevent a leak.

When the nipple is screwed into the flange solid, a reamer is turned into the nipple to make it smooth and perfectly rounded inside. A piece of gas pipe is turned up in the lathe to fit this taper hole. Sometimes it is necessary to grind it in with emery. This plug pipe is just long enough to measure the depth of the water in the pit. As it is open at the top, it keeps the surface of the water at the right height. The height of water, of course, must be just right to cool the cans of milk. As cans vary in size in different parts of the country, the depth of water must conform to custom.

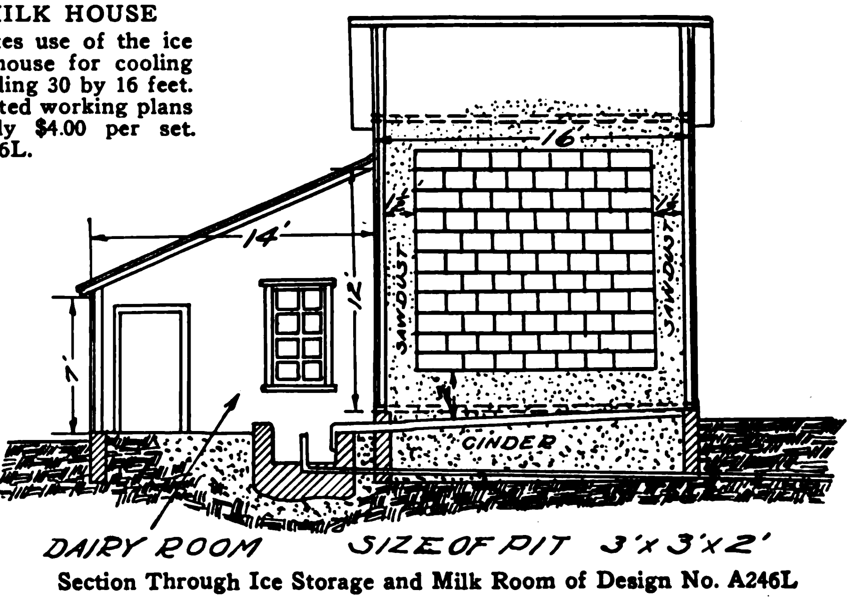
In using this cooling pit, if the drip from the ice house is not sufficient, a little ice may be put into the water when the cans of warm milk are placed in it, so as to keep the water cold while the milk is being stirred. After the milk is cold, the drip from the ice will keep a low temperature. This arrangement is adapted to farmers where cream or milk is shipped in cans. The size and arrangement of the dairy room will have to conform to the amount of milk produced, but it need not be very large. The plan shows 14 by 16 feet, and this is large enough to handle considerable milk.

Cream Separator for 3-Cow Dairy

The only practical way to ascertain the amount of fat in milk in a large dairy is by the Babcock test. The principle was discovered and the little machine was invented by Dr. S. M. Babcock, of Madison, Wis.

It pays to have a separator for a dairy as small as three cows. Part of the profit in using the separator is in having warm, fresh skim milk to feed to young domestic animals.

Where only three or four cows are kept, the milk from each one may be run through separately and the cream measured as a test for each cow. It is only by having some positive knowledge of the actual receipts that dairymen are enabled to determine which are the cows it pays to keep.



Section Through Ice Storage and Milk Room of Design No. A246L

The World's Greatest Farmer's Market

The population of the United States is close to 100,000,000, which means that we now have a great home market. But we still have plenty of room to grow.

Germany has a population of 270 people per square mile. The United States has about twenty-six per square mile. About 35 per cent of the population in each country is engaged in agricultural pursuits.

Each agriculturist in the United States has forty-one acres of improved land, while the average in Germany is only ten, and in England, eight acres.

In Germany, a farmer uses from $75 to $100 per acre working capital.

In this country, a farmer on 160 acres seldom has more than $5,000, or a little over $31 per acre, invested in live stock, implements, growing crops, etc.

In all civilized countries the question of how to maintain or restore soil fertility is always creating uneasiness.

Local conditions in each community have to be met. If your necessity seems to require some kind of fertilizer, consult your lumber dealer. He spends a great deal of time posting himself on the merits of fertilizers.

Farm Capital

It is commenly said amongst business men that farms are under-capitalized; that farmers are working under a handicap because they lack the capital necessary to stock their farms and to buy the necessary machinery to handle the work easily.

This may be true to a certain extent, but it is also true of men in all lines of business. The fact is, successful men are those who capitalize their knowledge and make it bring the necessary buildings, live stock, implements, etc.

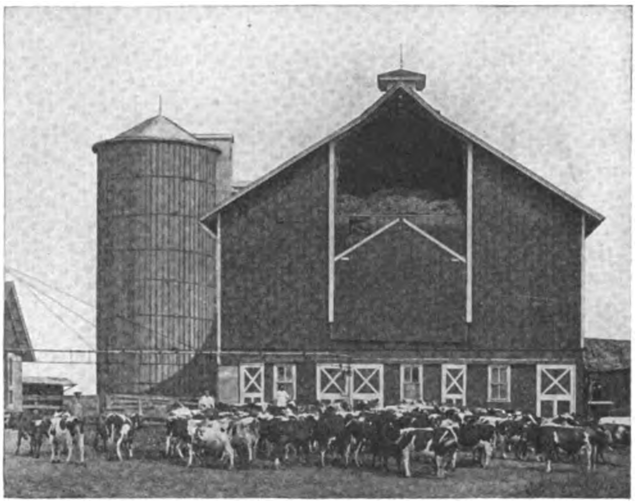
In farming, as in other lines of business, one man will make a success without much capital, while another makes a failure on a good farm with money to handle it in the most approved fashion. A good farmer is just as much of a business man as a merchant or a miller, and his chances are better, because he is engaged in a safer business.

Marketing Farm Produce

Farmers are not the best salesmen. This fact is brought home to farmers every day when they look over the markets and not the prices paid by consumers and compare the discrepancies between the prices in the city and the prices at the farms. City people are also looking into the question, with a view of bringing better methods to bear on the handling of farm crops. This is a question that demands attention from both ends, and it is getting it.

The Beautiful Old Homes

A nicely kept lawn with a few flowers and a border of shrubbery makes the old place look like a country home. It feels that way to the members of the family who have helped to make it a beauty spot. The new fence with its neatly trimmed and painted posts, and the clean-looking cement walk leading up to the front door, complete the proper setting for the closely cropped green grass and bright flowers.



Good, Well-Kept Buildings and Plenty of Live Stock Mean Permanent Prosperity on Any Farm.

It requires a little study to lay out the front yard in a way that will be satisfactory for years to come. Grass plots should not be cut up with flower beds. The place for flowers is next to the shrubbery. Shrubbery should be next to buildings and fences. A green lawn is too valuable to be broken into. Paths should be straight or slightly curved. Crooked paths are a nuisance.

The lumber dealer can furnish the posts and fencing, the cement and part of the necessary enthusiasm if you talk with him and give him a chance.

Agriculture is, of all industrial pursuits, the richest in facts, and the poorest in their comprehension. Facts are like grains of sand which are moved by the wind, but principles are the same grains cemented into rocks.

—LIEBIG.

Buying and Selling Run-Down Farms

A retired farmer living in Buffalo, N. Y., makes it his business to buy run-down farms and sell them again in a few months' time at a good profit. He puts a few hundred dollars expense on the fences and on the buildings. Such farms are always run down and are not attractive in appearance.

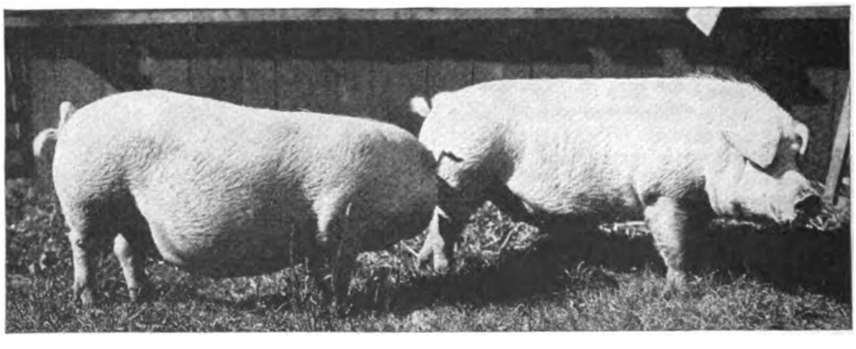
By using good judgment in making repairs, and in using paint freely, this man usually succeeds in selling the property within six months or a year; it depends somewhat on the season. But his plan always is to make a place look well. He does not attempt to add to the fertility of the land. He has no other interest in improving the farm, further than to make a profit by selling. He understands that to sell a farm to advantage, it must be attractive in appearance.

Have you read your insurance policy carefully? Does it insure, or is it merely a contract that binds you to pay a certain premium and lets the company out on some technicality after you are burned out?

Fix up the Farm Gates

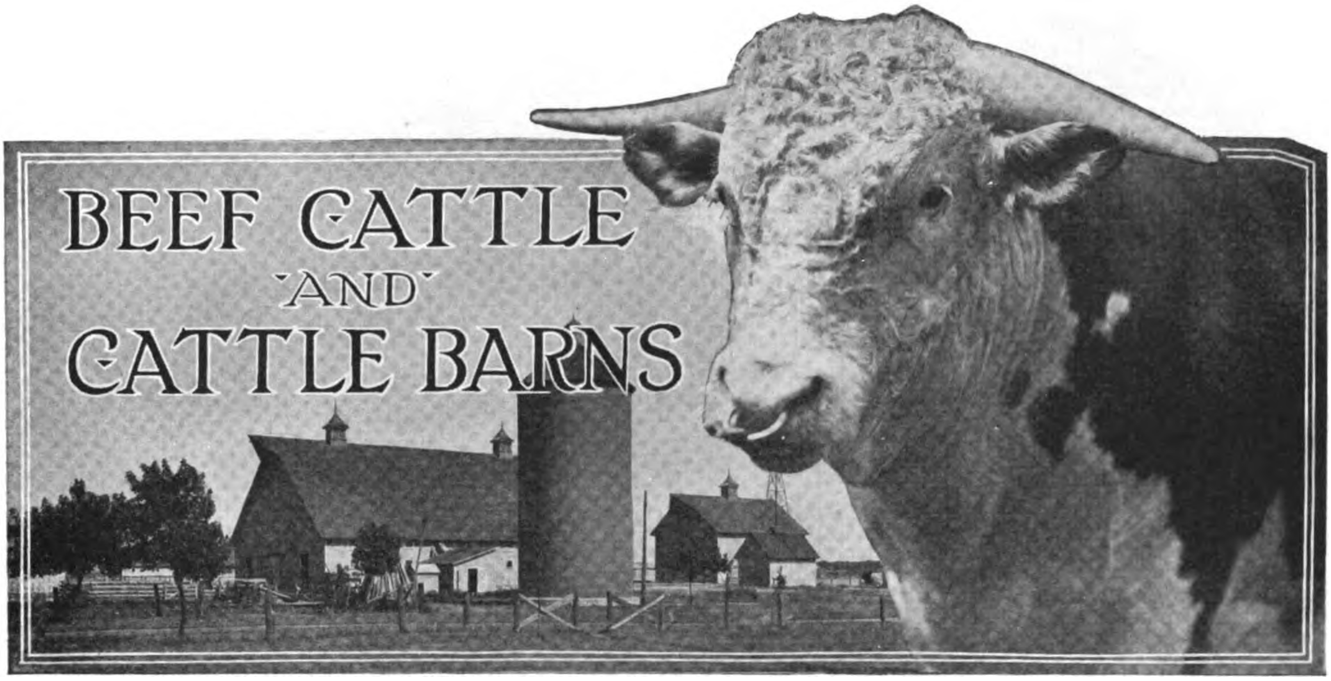
Neat farm gates, well made and carefully painted, add very much to the appearance of a place. You cannot have a good gate hanging on a poor post. A rotten old gate post may be taken out and used somewhere else for a shorter fence post, so it is not a complete loss; but every few years it is necessary to straighten up gate posts, put them in proper line and either put on new gates or repair the old ones.

This is a subject that farmers can take up to advantage with their lumber dealer. A great deal may be said about gates. Lumber dealers are pestered to death with circulars describing some new-fangled gate that the manufacturers think they should handle. Sometimes the manufacturers are right about it; at any rate, the dealer has some information that would be interesting. He always does have.



Every Farmer Should Raise Hogs. With Bacon Selling at 40c a pound, the farmer realizes the biggest profit who sends his corn to market in pig skins. These two Chester White Pigs were exhibited at the Wisconsin State Fair.

BEEF CATTLE AND CATTLE BARNS



Feed Lots for Beef Cattle

Where cattle are fed in large numbers it pays well to fit up properly for the business. In the corn belt buying thrifty young cattle and finishing them for the market, is a splendid business in the hands of men who understand how to buy, how to feed and how to sell. The old fashioned way of putting a fence around a mudhole and confining a bunch of cattle in the mire for weeks or months at a time ceased to be profitable long ago, but unfortunately some men haven't found it out. Considerable engineering ability is required to plan and construct feed lots for the accommodation of large numbers of cattle in such a way as to make the animals comfortable and to economize labor.

Design A184L

The plan on next page has received very careful attention in this respect. The storage barn and silos are set on a ridge of ground sloping preferably to the southwest. The feed lots thirty-two by seventy-two feet in size, including the shed, are fenced off one after another as many as needed. Two yards only are shown in the drawings because no matter how many you have each pair of two would be a repetition of this pair. The lots might be extended a quarter of a mile holding the same order.

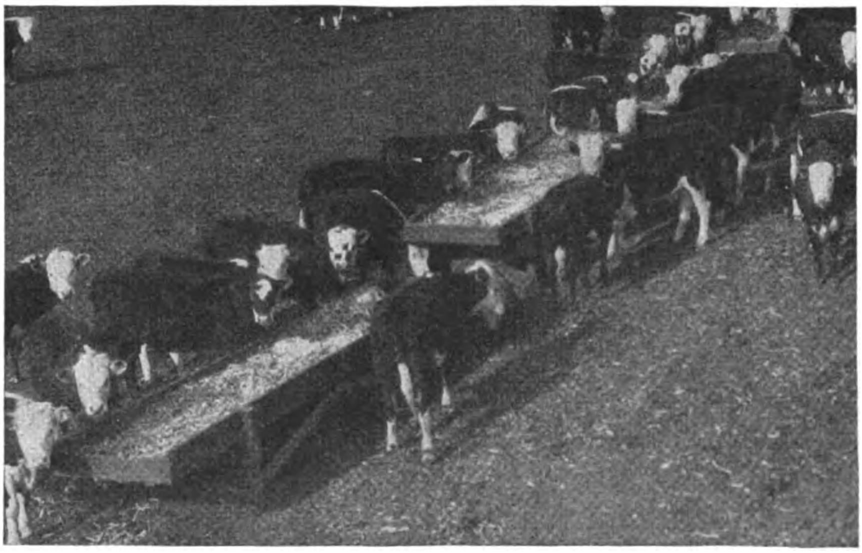
The feed carrier tracks runs over the heads of the cattle high enough to leave a passageway under for a pair of horses and a manure spreader. Eight feet in the clear is little enough and it is high enough because straw as well as feed will be brought to each lot by car on the overhead track.

The car is made large for this purpose, being four feet wide at the bottom, six feet wide at the top, four feet high and eight feet long with corner sockets for stakes to hold straw or hay. When filled with silage it will make quite a load, but one man can move it if the wheels are large and kept well oiled and if the track is level and true. Make the track absolutely dead level and perfectly straight. In building the track you are trying to save time and labor at every feeding period for a number of years to come. You want the track so true and the car wheels to fit so perfectly that the car will run along without much friction after getting it started.

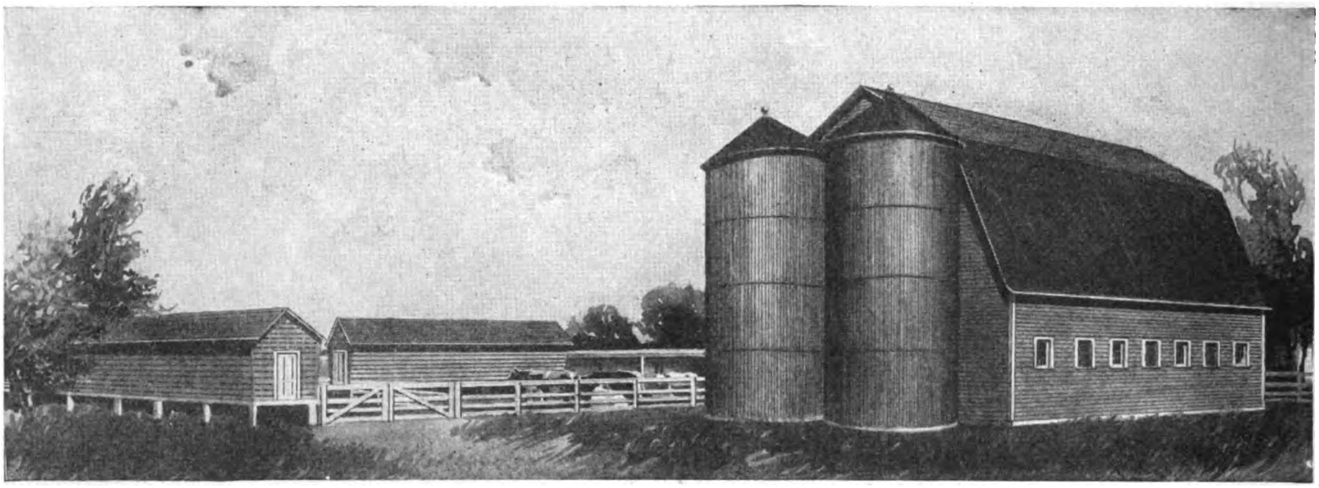
One man with a rig like this that works right should feed a large bunch of cattle because he can take advantage of his work. In the first place he has got a car big enough to hold something. He runs a chute from the silo to the car which, until the silo is nearly empty, saves forking the silage up from the floor. The sides of the car are hinged so they dump down into the feeding racks in the yards. He loads the car quickly and easily and the stuff unloads itself. The track is made in sixteen foot sections, as the yards are thirty-two feet wide the tracks have one support in the middle of the yard. The other supporters form part of the fences between the yards.

In laying out the yards the problem of draining must be worked out first. It is impossible to have the yards dry and comfortable unless ample provision is made for taking care of the rainfall. A drain tile is marked on the plan leading from the corner of the storage barn and running across the ends of the feeding pens down the whole length of the alley to an outlet in the field beyond. The brick pavement in each feed lot slopes to the center to lead the water to the tile drain underneath which connects with the trunk line of tile near the fence in the alley. This main drain increases in size to accommodate the extra drainage as it proceeds past the different pens.

An open shed twelve by thirty-two feet occupies the high end of each



Well Built Feed Racks Save Enough Fodder to Soon Pay for Themselves.



LABOR-SAVING FEED LOT FOR BEEF CATTLE

Enclosed feed lot provided with shelter sheds and self-feeding corn cribs. Each feed lot is 32 by 60 feet. There is a 20-foot driveway between the main corn crib and the feed lot gates. Large storage barn with double silo, will hold enough roughage to winter a large herd. Size of storage barn 45 by 72 feet. The feed lot can be extended to any dimension by adding on more units. We can furnish complete set of blue-printed working plans and typewritten specifications for this complete outfit for only $12.00. When ordering, ask for Design No. A184L.

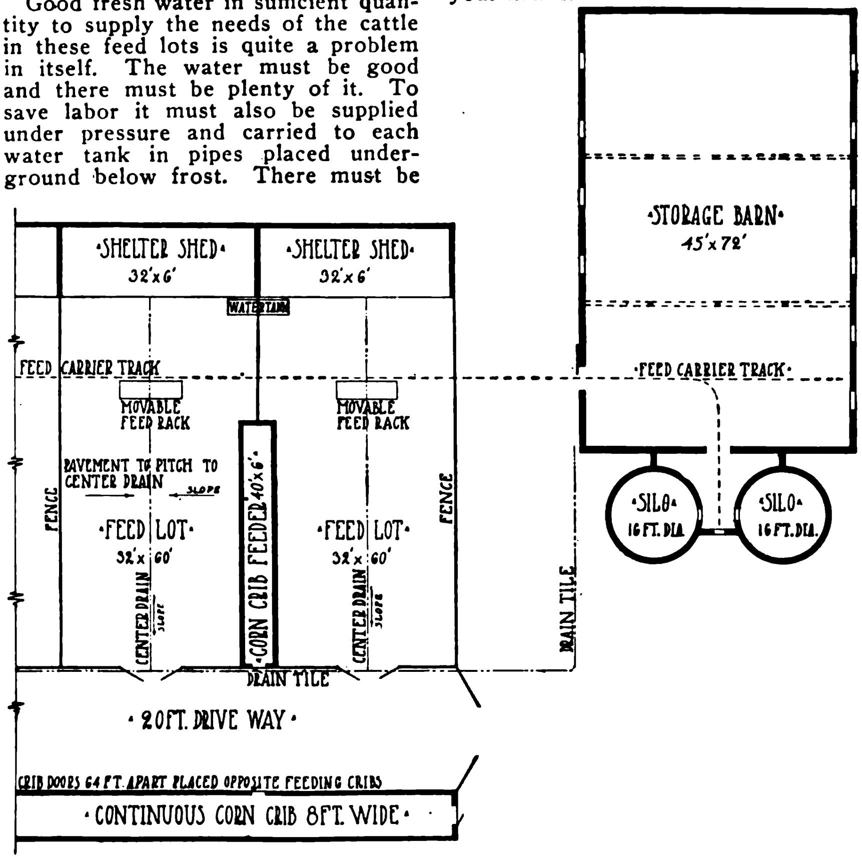
yard. This shed is not paved but is kept well bedded. All the rest of the yard is paved with brick laid flat on a cinder bed. Or a concrete pavement serves equally as well and many prefer it.

An additional drain tile runs from each water tank to the trunk tile line to take care of any overflow from the tank. In some locations another tile drain will be necessary at the back of the shed to take care of the drip from the eaves because the ground must be kept dry.

Water Supply

Good fresh water in sufficient quantity to supply the needs of the cattle in these feed lots is quite a problem in itself. The water must be good and there must be plenty of it. To save labor it must also be supplied under pressure and carried to each water tank in pipes placed underground below frost. There must be a valve placed in each pipe running to each water tank so constructed that it won't freeze.

Generally the water must be supplied by a windmill and a reservoir of some kind. A cement basin in a nearby hillside and protected from frost is perhaps the most satisfactory because when once made it is permanent. The source must be sufficient to supply it and the windmill or other power which does the pumping must be powerful enough to do the work at all times. You cannot afford to take chances on a water famine with several hundred feeding cattle on your hands.



Layout of Feed Lot and Storage Barn Illustrated in Above Plan No. A184L

Storage Barn

In the plan not much attention is paid to the storage barn except that it shows the most convenient location. Every feeder must plan storage to suit his way of doing business. If he has a large farm on which he grows alfalfa, grain and other crops that make large quantities of roughage he must provide an extensive storage barn with appliances to get the stuff in and to get it out again when needed for feeding.

Generally speaking, the barn should be large and high. The capacity of a storage barn is increased by additional height at a very rapid rate because all kinds of loose fodder packs very close in the bottom and lives very loose at the top. A deep bay may be filled to the peak with hay at haying time and settle sufficiently to hold a large quantity of sheaf-wheat a few weeks later, but a shallow mow don't hold much at any time. It doesn't have the weight sufficient to pack it.

There will, of course, be a good solid floor over the car track and there will be chutes or openings to let the hay down directly into the car. The same horse fork that is used to put the fodder in will move the stuff from the other parts of the barn to this floor as it is needed.

The Shed

A continuous shed is designed to run the whole length of the feeding plant without a break. The shed is twelve feet wide and eight feet high in front and six feet six inches high at the back. The shed faces the south and the front is left open to admit sunshine. The construction is light and cheap. There are no partitions except the fences between pens which run to the back of the shed; in fact, the fence posts and shed posts are the same.

Two by six rafters fourteen feet long are used for the roof. These are covered with sheathing boards, dressed one side, and on this is laid a roofing of shingles or felt. The north side is banked with cinders to prevent the cold winds from blowing under and the ground floor of the shed

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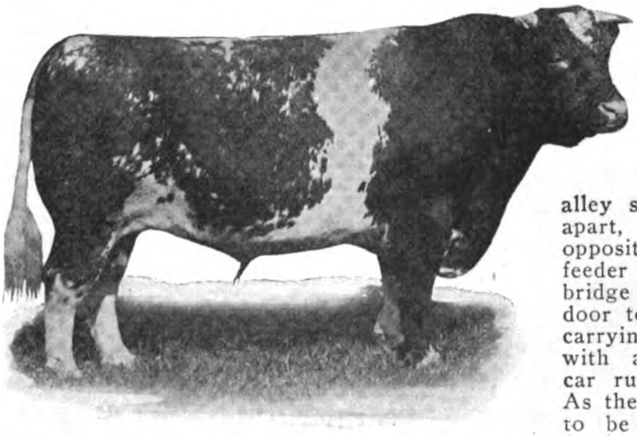


Prize Shorthorn Bull. There is room for a drove of beef cattle on every farm.

slopes to the pavement. A liberal supply of straw for bedding is kept in the shed and this is carefully shaken up and the dung picked out every day.

Feeders appreciate the importance of making animals comfortable. It takes a good deal of feed to supply the heat dissipated by animals lying on the cold ground. Straw is cheaper than corn.

Beef cattle don't require much protection against the dry cold. Their thick winter hair and hides are sufficient if they are kept dry and well fed. Cattle will gain a little faster on the same amount of feed if kept warmly stabled, but they must have fresh air; and the extra expense of individual attention when handling them in a stable more than eats up the additional profits from the extra gains made. A feeding rack well up above the ground along the back of the shed is a good thing at times in rainy weather; it induces the cattle to stay inside. It is better to put the feeding racks on the ground when you use them regularly every day, but ground space in the shed is limited and such racks will be used occasionally only. For this reason it is not desirable to take up any more ground space than necessary for this purpose.

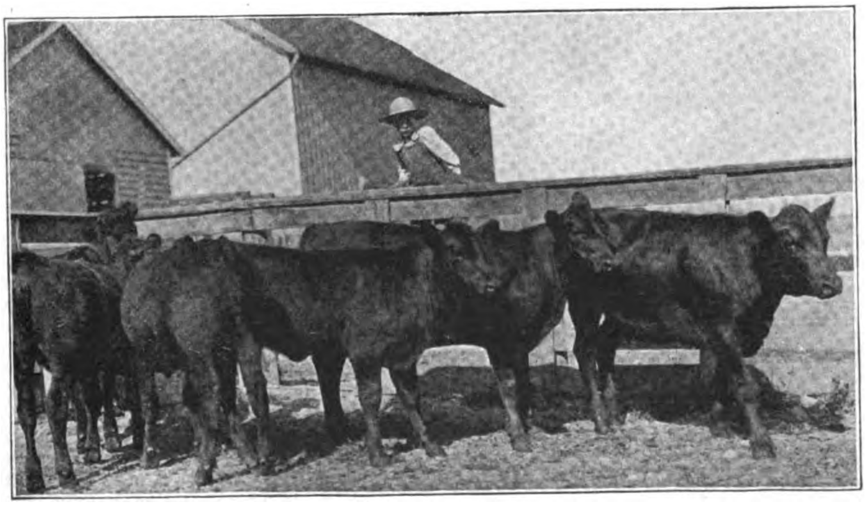
Corn Crib

On the south side of the alley way is a corn crib eight feet wide, ten feet high above the foundation posts and as long as necessary. The crib is intended for storage purposes to hold corn enough to last all winter. There is a door in the end and doors along the alley side sixty-four feet apart, each door being opposite the door of a feeder crib. A temporary bridge reaches from one door to the other so the carrying may be done with a wheelbarrow or car running on a track. As the bridge is intended to be moved from one feeder crib to the next a wheelbarrow would be handier than a car because it is lighter and may be easily moved.

Feeder Cribs

Between each pair of feeding pens is a feeder crib six feet wide at the bottom, eight feet wide at the top and eight feet high. These cribs are forty feet long extending back from the alley fence. This gives forty lineal feet of corn trough for each feeding yard. These feeding troughs are made by extending the two by four floor across joists two feet beyond the sills at each side. The floor in the crib is laid on top of these cross joists and the feeder boxes are made by boarding on the under side and across the ends. This makes the floor of the feeder trough about five inches lower than the floor of the crib, which permits the corn to work out easily and in case of a driving storm the water does not run in from the feed troughs to wet the crib floor.

Some little experimenting is necessary to get the opening the right size.



Polled Angus Calves being fitted for "baby beef" market.

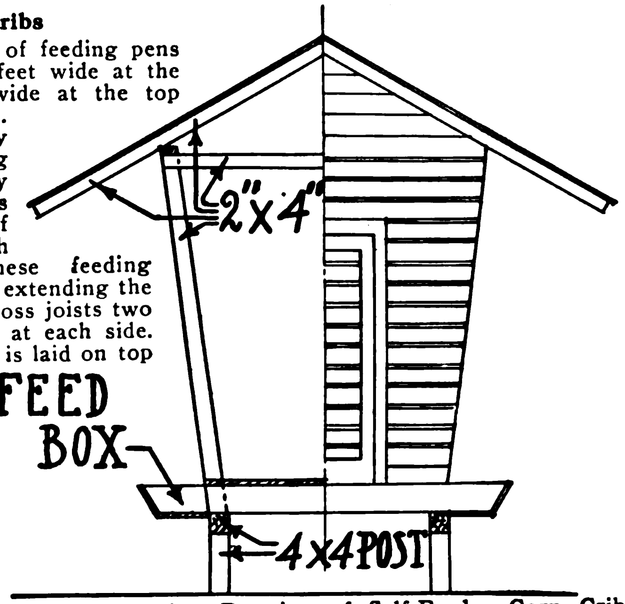
A smaller opening answers when the trough is lower than the corn floor. A narrow strip may be nailed in the opening at the top if it is found too large.

The roofs of these feeder cribs are made by using sixteen foot boards full length. The projection keeps the feeder troughs dry and provides a little shelter for the animals when feeding. For the comfort of the cattle it is a good plan to run eave troughs the whole length of these roofs.

The drip water could be carried to the water tanks or the drain in the alley.

At corn harvest time these feeder cribs of course would be filled first with the earliest and best seasoned corn to feed first. The later and poorer quality of corn would be housed in the main storage crib.

It is not every feeder of beef cattle who approves of self feeder cribs, but if they don't like to have the animals help themselves the same cribs and the same troughs will be just as useful, so that the man who really loves to work may dig the corn out, load it in a basket and carry it around to the side of the crib and distribute it along the troughs. It will pay some men to do this, men who are built that way. Each horse must work in his own harness.



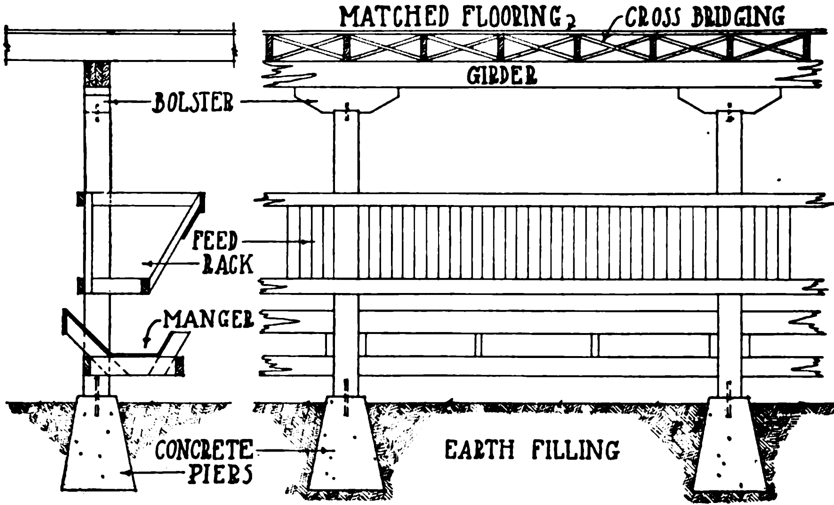
Detail Working Drawing of Self-Feeder Corn Crib. **The steers help themselves to the corn as it slides down and out into the feed boxes. These feeder cribs are 8 feet high, 6 feet wide at the bottom, and 8 feet wide at the top. Each crib is 40 feet long.**

The Silos

For some unaccountable reason beef men have entertained a prejudice against silos. But not every man who feeds cattle without their assistance objects to silos. In many cases they have more corn stalks than they can feed without trying to save the last vestige of the corn crop, and they think the animals can cut the feed and mow it away cheaper than it can be done by machinery, but the fact remains that nearly one-half of the feeding value of the corn crop is in the stalks and leaves of the corn plant. If cut just at the right time, when the sap is all in the stalk, then cut up fine and packed away in an air-tight silo the stalks lose very little of their feeding value. They may be kept a year and the last silage from the bottom comes out as fresh and apparently as palatable as the first. Cattle will even leave pasture in the summer time to eat left over silage. If we ask the animals what they think of it their actions are strongly in the affirmative.

Looking at the silo problem from the broadest side it certainly would pay to put some of the crop in silos. The corn from ten or fifteen acres will fill a sixteen by thirty-two foot silo so that most feeders would only have an opportunity to cut off one side of the corn crop to fill one silo.

This feeding plant is designed to save labor and to utilize feed to the best possible advantage. It would be difficult to build a large plant any cheaper and have it satisfactory. It would also be difficult to build, on any other plan, a thoroughly practical plant that could be extended indefinitely as the business grows without altering or rebuilding.



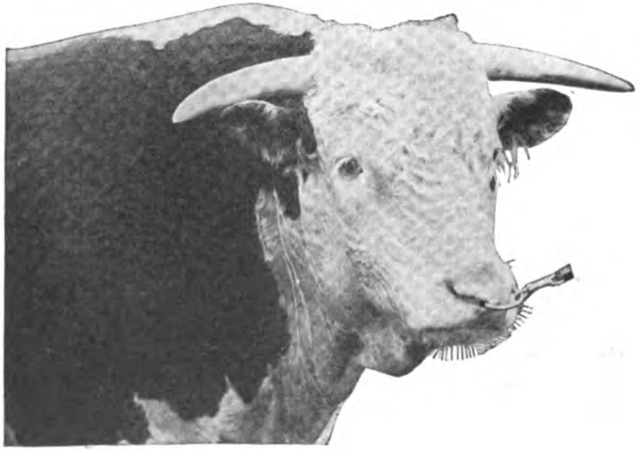
Detail View Showing Cross-section and Elevation of Shelter Shed with Manger and Feed Rack for Stabling Beef Cattle.

Beef Cattle Breeds

HEREFORD. The Hereford breed of beef cattle is readily recognized by its red body color and white face and general beefy appearance. The breed originated in the southwest of England. Herefords are great range cattle. On the western plains they seem to be perfectly at home. They are large, mature earlier than any other beef breed, and make good use of the rough range grasses and are good rustlers. Usually Herefords have white, drooping horns, but there is a breed of Polled Herefords that is becoming very popular for farms where cattle are housed part of the time in winter.

SHORTHORN. The Shorthorn breed of cattle came originally from the north of England. It is an old breed of beef cattle that still retains its popularity. The Shorthorn breed is also a dual-purpose breed, producing excellent milkers. There are strains or families noted as dairy cattle. Shorthorns were imported into Virginia in Colonial days. Their merit carried them into every State in the Union. According to numbers, it is the most popular breed of heavy cattle.

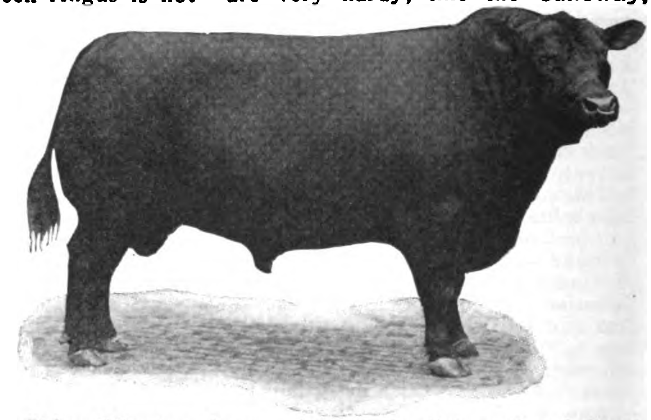
POLLED DURHAM. Polled Durhams are supposed to be Shorthorns with the horns bred off, as the breed retains the characteristics of the Shorthorn.



Prize Hereford Bull, representing one of the most popular beef cattle breeds.

ABERDEEN ANGUS. This is a Scotch breed of beef cattle that has of late years become very popular in the United States. These animals are affectionately called "Doddies," which is the Scotch term for hornless. The origin of the Aberdeen Angus is not known, but it is supposed to come from the original forest cattle of Scotland. While the Aberdeen Angus like a good range, its general disposition fits it more for the small farm, where it may receive individual attention. Like the Hereford, the Polled Angus requires lots of forage and a liberal amount of grain.

GALLOWAYS. The Galloway is another Scotch breed, the origin of which is not given in history. The Galloway is a great rustler. Owing to its coat of fur, it can endure more cold than any other breed of cattle. Like the Polled Angus, the Galloway is also bred without horns. The color must be black, with a brownish tinge. No white is permissible. The Galloway is thoroughly a beef breed.



Prize Winning Angus Bull at the International Stock Show. **A breed of growing popularity among beef cattle raisers.**

SUSSEX CATTLE. This is an English breed, originated near the Channel in the south of England. There are a good many Sussex cattle in America. They are solid red in color, with large and rather long horns, curving toward the front. The Sussex cattle are blocky in form, a heavy beef type, comparing in size with the Herefords.

WEST HIGHLAND. This is another Scotch breed of beef cattle that has been known for centuries. These animals are very odd in appearance. Their long, spreading horns and shaggy coat give them a distinctive individuality that arouses curiosity. They are very hardy; like the Galloway, their shaggy coat protect them from the severe cold winter and bad storms. Size is small in comparison with other beef breeds, and the cows give but little milk. These cattle are valuable on rough, cold ranges.

TEXAS LONG HORNS. The Texas steer has practically passed out of existence, but it is quite popular in history. Characteristic pictures represent the Texas Long Horn as having long legs, prominent hip bones, rough hair and a big head, with horns about a yard in length.

Carabao or Water Buffalo

Very few attempts, if any, have been made to propagate Water Carabao in the United States. It would be difficult to say, at the present time, just what advantage these cattle would have over our present domestic stock, but the Water Buffalo is very highly prized in the Philippines.

It is a very odd looking animal, on account of its long horns. The head and face resemble our domestic cows; and the makeup of the animal is quite similar to some of our native cattle. But it is a water animal and loves to wallow in the mud. The meat is said to be of fairly good flavor, and the hide and horns are of considerable commercial value. They are very docile animals and are used in the Philippines like oxen.

Catalo

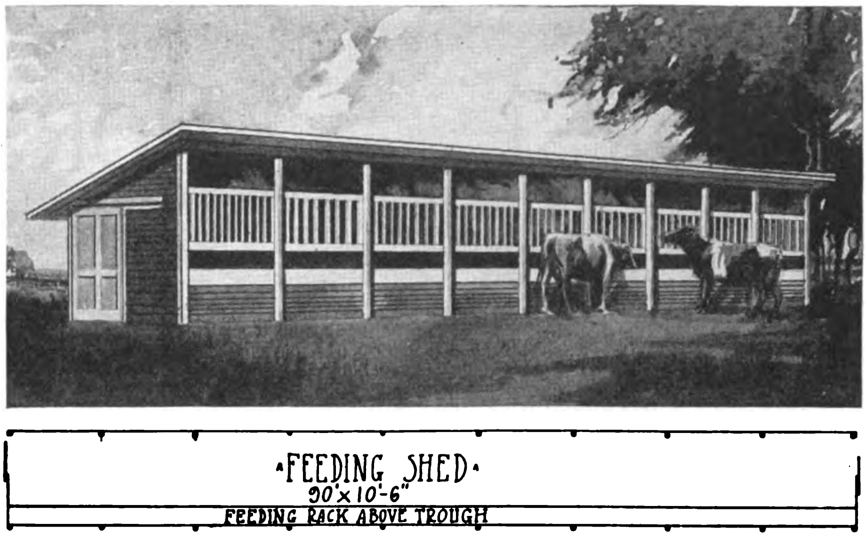
The Catalo is the offspring of a buffalo bull and a domestic cow. The Catalo resembles the buffalo in shape and color. The fur also is much like the buffalo.

Several years ago it was said that the raising of Catalo for their fur would be a profitable business, but up to the present time no one has succeeded in raising them in large numbers.

Feeding Shed for Cattle—Design A123L

On farms where a few beef cattle are fed each winter, some kind of a feeding device is needed to prevent waste. Also shed room is needed for protection against storms and cold winds.

A shed like this, built on the north or west side of a good feed lot, will be of great help in handling roughage.



FEEDING SHED FOR CATTLE

Feeding shed 90' by 10' 6" with hay rack and feed trough that can be reached from the inside and from the outside. We can furnish complete set of blue-printed working plans and typewritten specifications for only $3.00 per set. When ordering, ask for Design No. A123L.

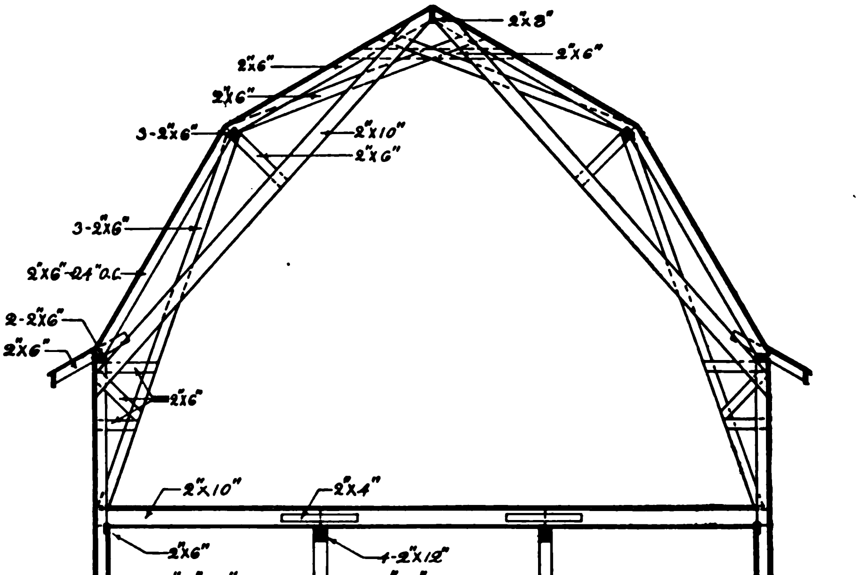
The hay feeding rack, as shown in the illustration, is so arranged that hay may be pitched in from the wagon. There are slats inside of the shed which slope upwards to the roof, so the cattle may feed either from the front of the shed or from the inside. Under this rack is a trough, for feeding silage or grain, made of 2-inch planks, bolted to the upright posts.

The trough, like the feeding rack above it, may be reached either from inside or outside. The intention is to have the bottom of the rack high enough for a beef steer to stand under it, and the trough is low enough for comfortable feeding. Still, it is sufficiently well up out of the barnyard litter.

There are doors in the ends of the shed which are generally left open. Bedding is scattered about and the manure is picked up every day. It is difficult to keep a shed like this in condition for feeding all winter if the manure is permitted to accumulate.

Sometimes calves and other small animals are shut in the shed, and the larger cattle permitted to feed from the front side. Because of the open front, the roof is built to project about 6 feet, to protect the hay in the rack.

Feed racks and feeding troughs for cattle should be roomy. Troughs should be low down and wide enough to catch most of the clover leaves and other fine stuff as it drops from the rack.



This design shows a well braced roof barn bent, showing a very strongly trussed hip roof construction. The purlin plates are well supported from the main posts at the second floor.

Each side of the roof is so braced as to form a very strong combination truss. Cross ties are placed at every point where cross bracing is required. Commencing at the second floor, this construction forms a series of connected trusses reaching to the peak and down to the floor on the other side of the building. Each truss is separate and distinct in itself, but each truss merges into the next one so that the whole cross section of the roof is tied together in the most substantial manner possible with the amount of material used.

The sizes of the different timbers are shown in figures on the diagram. These sizes have been carefully worked out and proportioned to secure great strength for a roof up to the ordinary width of farm barns, say 40 to 42 feet. Anyone building a barn wider than 42 feet will order a special design for the roof plan.

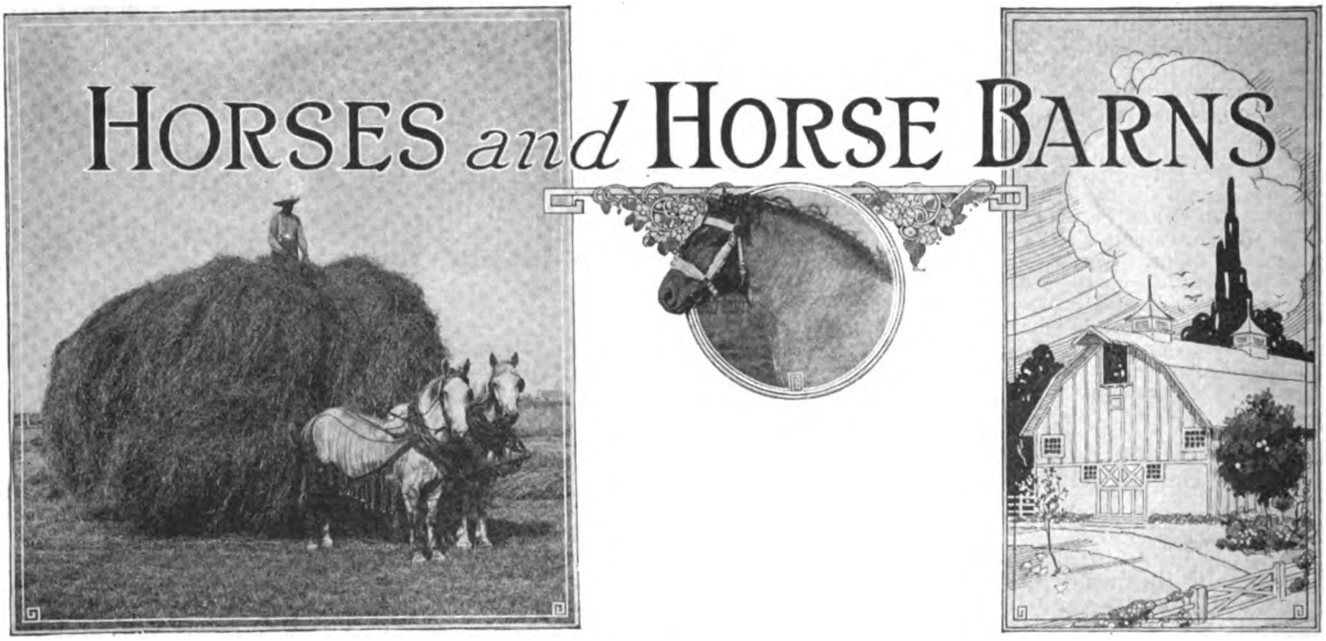
Shortage of Cattle

Because the United States is shy on cattle, good farming methods are more difficult to practice. Cattle on the farm mean fertility. Grain growing without grass and manure never has been profitable. People who work hard must eat beef; beef must have grass, and grass means fertility. With our annual increase of population, it is difficult to see how the cattle industry is going to catch up, but it must be done or the land will suffer.

It is estimated that a bushel of corn contains 28 cents' worth of fertility. By feeding the corn, most of this fertilizing material can be returned to the land. A good stable is necessary to capture the full profit.

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

HORSES and HORSE BARNS



The Why and How of Buildings for the Horses

Farm buildings serve their purpose best when especially adapted to the specific use required of them. Horse barns should be different from any other building on the farm. The health and comfort of horses should be the first consideration, but convenience in attending to their wants and requirements makes a close second.

All horse stables should be well ventilated. Every farmer knows that there is a great difference in stables in this respect. Some stables are so built that you would rather keep out of them if possible, because they can't be kept clean. The smell of ammonia is always present and when the doors are shut it is very disagreeable. Imagine shutting a valuable horse up in such an atmosphere at night, and expect to find him in good condition in the morning. Horses are the most expensive animals on the farm and the most susceptible to disease; hence, the first consideration in a stable should be to promote the health of the horses.

A horse stable should be cool and airy in summer and it should be warm and well ventilated in winter. The floor should be made in such a manner that it will not absorb the liquids from the manure, and there should be no cracks to let these liquids down underneath to ferment and destroy the air in the building. Stable ceilings must necessarily be high enough to permit a horse to get his head up. Horses are warm animals; that is, they contain body heat enough to warm a stable when conditions are as they should be.

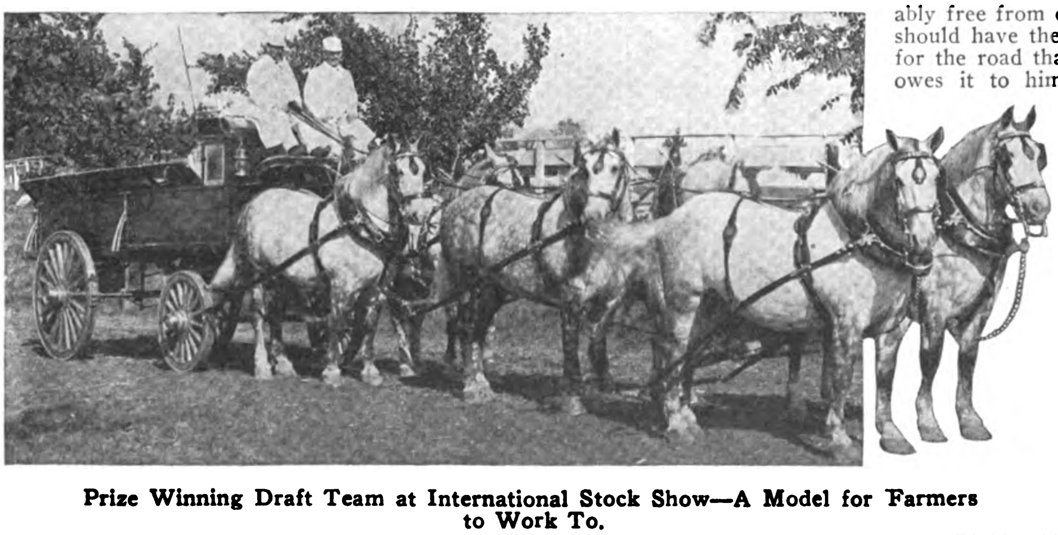
Before starting to build, put a little time on the study of ventilation. Read up on the circulation of warm air. Don't depend on others, because they might not understand the particular conditions you are dealing with. It is well enough to ask advice, but get the information from different sources, so that you may be able to sift the quality of your instructions sufficiently to keep the grain and discard the chaff. Don't blindly copy a stable that someone else has built, without carefully considering whether or not it fits your requirements.

A horse stable that works all right for one farmer is all wrong for another, because his horses may be larger, or he may have more of them, or he handles them differently. Some farmers have a lot of horses that they press into service in the summer time and turn out in the yards and sheds to winter. Such farmers usually raise horses to sell and have more than they need at all times. Other farmers keep just what horses they need to do the work. They keep four horses or six horses the year round and they have no intention of altering their usual custom. But in either case a man can arrange a stable for a certain number of horses and build it accordingly.

In cold weather, a stable big enough for six horses will not be warm enough if only two are stabled. If, for any reason, the stable is too large, it is better to fill it up with cows in the winter, for the reason that you cannot have ventilation without heat. On general principles, it is more satisfactory to keep horses in a building by themselves, and it is but little extra expense to do so.

When possible, a horse stable should contain a carriage room that is reasonably free from dust. Every man has or should have the ambition to keep a rig for the road that is decently clean. He owes it to himself and his family to provide a respectable turnout. A farmer's family depends for a change and recreation on the opportunity to get away from home by means of the horses. They are judged to a very great extent by the appearance they make.

You cannot get away from the fact that a person's social standing in the community is, to a certain extent, arranged for them by the



Prize Winning Draft Team at International Stock Show—A Model for Farmers to Work To.

opinion of others. No man stands alone. His regard in the community depends largely upon the appearance that he and his family make on dress occasions, and the appearance in turn depends very much on the horses, harness and wagons that they use when driving on the public road.

Barn with Monitor Type Roof —Design A275L

In illustration A275L is shown a type of barn that has been built a good deal by horse breeders. But this plan was drawn for a general-purpose barn for a farm in Minnesota. It differs from the old horse barns by having an upper floor the whole size of the barn.

The owner has some good horses and he has some good cows. He looks after them himself, and is very carefully breeding up. He uses the vehicle room at present for training his colts in the winter time. For this reason, he leaves out the grain bins for the present, as he could store his grain in the old shed granary for another year.

He believes in training a colt when it is quite young. He spends hours on this floor in the center of the barn in the winter time, teaching young colts what a halter is for and why they should behave differently when they have a bridle on and a bit in the mouth.

The size of the barn is 48 feet in length by 57 feet in width. It is a case of building a barn wider than the length. The expense is not very much greater by adding the monitor roof, as it would otherwise be a single straight roof building, but this monitor helps a good deal in the storage.

There is a good concrete foundation wall extending all the way around the barn, and the stable floors, feed alleys and manure alleys are of concrete. The owner wanted a soft floor in the center of the room 20x46 feet for his colts. As this room is separated from the two stables, it may be floored at any future time, without interfering in any way with the present arrangement of stables.

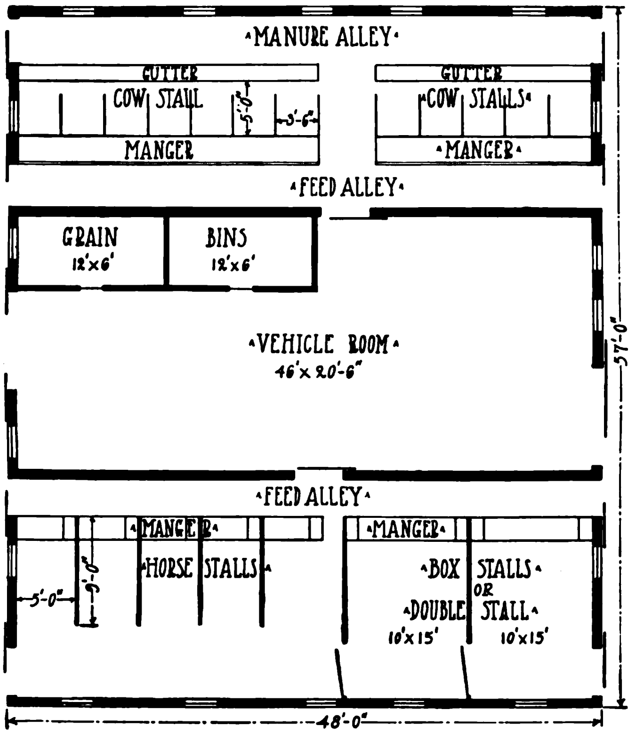
The ceiling over the stable is supported by feed alley partitions and other posts in the usual way.

Rods of Fencing Required

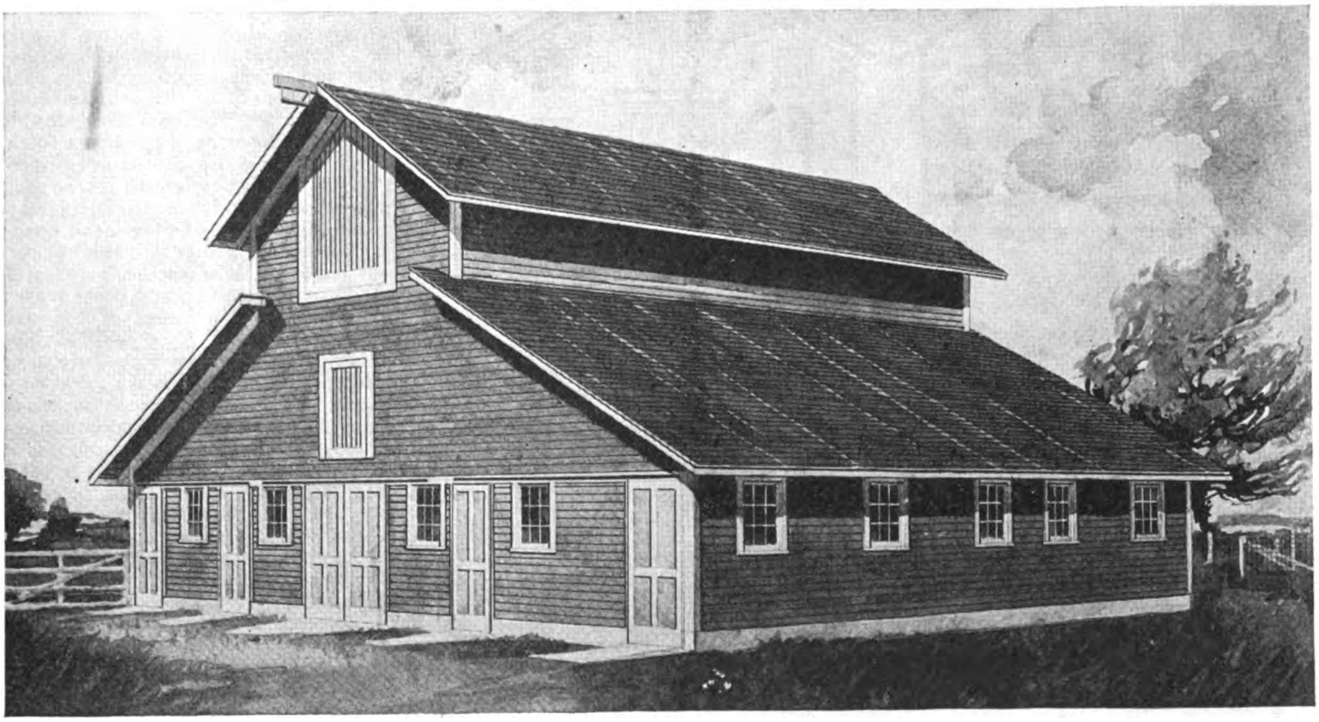
Most of the land in the United States has been surveyed into townships containing thirty-six sections. The sections are each one mile square, with a road all the way around; half the width of the road comes off from the measured section. the other half from the adjoining land.

Sections contain 640 acres and are divided into sixteen 40-acre farms, so that each farm has a road on one side and the corner farms have roads on two sides. It requires a little less than four miles of fencing to fence a section. It takes one-fourth mile, or eighty rods of fence to reach across one side of 40 acres. Forty acres square requires one mile, or 320 rods of fence to enclose it. Less fencing is required to enclose a square acreage than a lot that is rectangular.

The lumberman can sell fencing as cheap and as good as can be bought anywhere, and he knows more about the different makes. He also knows the proper weight of wire to use, and he knows a whole lot about posts.



Floor Plan of Barn No. A275L



LOW-COST BARN WITH MONITOR TYPE ROOF

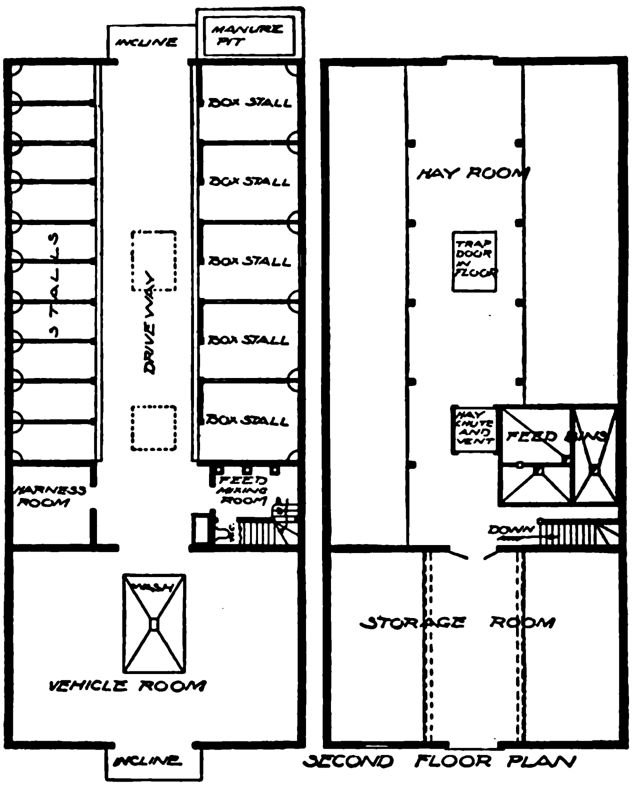
An interesting and popular barn design, 48 by 57 feet. High center part holds considerable roughage. Ground floor is laid out for vehicle room in the center with horse stable at one side and cow barn at the other. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design No. A275L.

"Vinag," Champion Percheron Stallion of France. Now Owned at Wayne, Ill.

Plain Barn for 15 Horses—Design A161L

A plain, straightaway horse barn with ten single stalls, five box stalls, feed room, harness room and vehicle room with a wash platform in the center, is given in this plan. There is a driveway through the center, wide enough to admit a load of hay or a load of straw, if so desired, but there are doors opening outside in the gable to pitch in hay and straw, either by hand or with horse fork, so it would not be necessary, ordinarily, to drive inside with a bulky load; but a good passageway between horse stalls is a great convenience anyway.

This barn will easily accommodate fifteen horses and it will hold feed enough to supply them for a long time. The building is 37 feet wide and 68 feet long. It is set on a stone foundation with two rows of stone piers supporting the floor joists and posts which run to purlin plates.



FIRST FLOOR PLAN SECOND FLOOR PLAN

Arrangement of Barn No. A161L.

There is a large vent shaft running from the stable ceiling to and through the haymow, with doors for throwing down hay or fodder, as well as for ventilation. Grain in sacks can be hoisted up this ventilator shaft and conveniently dumped into feed bins which have hopper bottoms and spouts leading to the mixing room below.

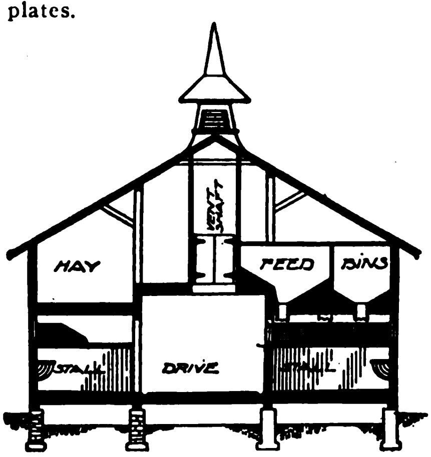
In the driveway at one side of the mixing-room door is a water supply pipe and watering trough with a hose connection to supply water to the wash room on the floor of the vehicle room.

The stalls are floored with a double thickness of flooring, 1¾ inches thick, slightly sloping to cast-iron gutters which run the entire length of the stall room on each side of the driveway. The first thickness of these stall floors is laid in hot tar, then two thicknesses of tar roofing felt is put on, being well mopped over with tar, and this covered with the upper thickness of 1¾-inch flooring.

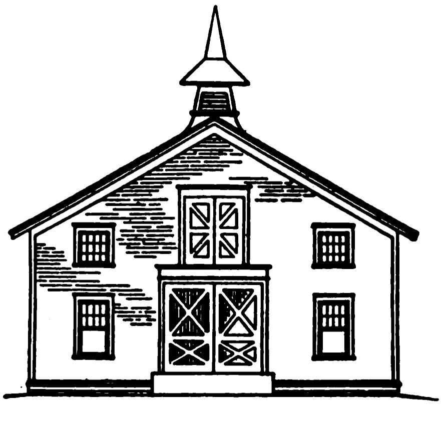
Where a great many horses are to be fed, overhead feed bins are a great convenience. The bottoms may be made hopper shape, as shown in the plan, or they may be level. A hopper, of course, is best, but with a flat bottom, a little accumulation of grain around the edges at the bottom is all that remain when the grain stops running down the spout, and flat-bottom bins are cheaper.

The main entrance doors are both wide and high. Unless the door is large enough it is sometimes difficult to get out. The door must have a good height because you want room for a carriage or a top-buggy. We all have had experience in catching a buggy top on the lintel of a low doorway. It seems to be the proper occasion for saying things. No builder likes to have such remarks made about him.

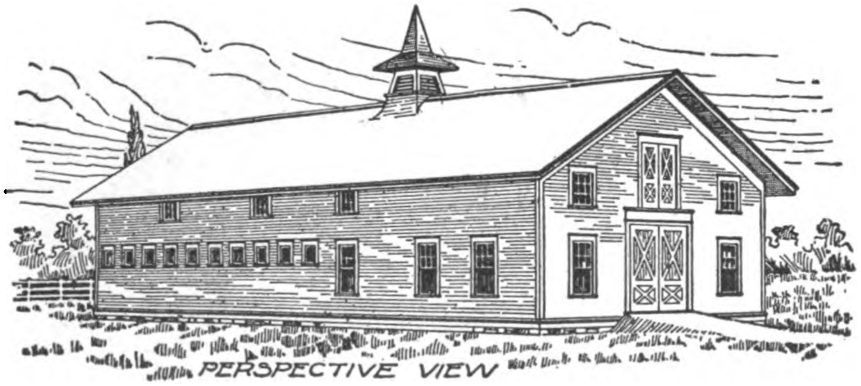
There is a good row of box stalls. It is difficult to plan a decent sized box



CROSS SECTION



FRONT ELEVATION



PERSPECTIVE VIEW

SENSIBLE HORSE BARN

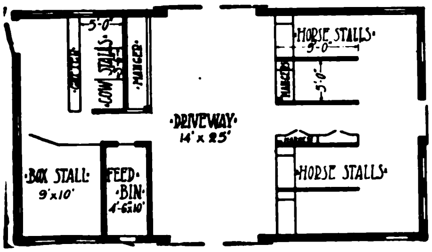
Straightforward gable roof barn with ten horse stalls, five box stalls and vehicle room. Size 37 by 68 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A161L.

Well Designed Barn at Greeley, Nebr.

stall in a small stable. They run into room too fast. Nothing looks so comfortable for a good horse as a roomy box stall. If the horses had their way about it, there would be more box stalls, but it really requires about three times as much room to stable horses in this way. No man begrudges the room, but most men don't like to put up money enough to enclose it properly.

The ideal arrangement for stabling a horse is a big box stall with a good-sized window for light, and door cut in half, so that the upper part may be left open during the daytime to let the horse look out. A box stall, shut up tight, is a prison for a horse; they like to see things as well as other folks.

Some box stalls are fitted with rubbing boards. These consist of planks about 2 inches thick, turned edgewise to the horse, and fastened to the sides of the stall just low enough down so the horse can't rub his tail. A box stall needs no floor, and there should be no feed rack or manger. A box on the ground to feed oats in is all the manger necessary. The hay should be put in at frequent intervals in small quantities, placed lightly on the floor or bedding against the side of the stall. This way of feeding has often cured horses of chronic indigestion.



Floor Plan of Barn No. A230L.

In building a stable, it is a great deal better to find out all these little details and build accordingly. There are several reasons why box stalls are better than standing stalls with mangers. A horse loves his freedom. To understand this, it is only necessary to watch a horse when you take the bridle or halter off.

One great defect in horse stalls, as you ordinarily see them, is lack of ventilation. It is quite common to see the inner walls of a stable in winter white with frost. The frost wouldn't be there if the stable was dry, as it should be. It is not necessary to put in an elaborate system of ventilating pipes in a small stable. The windows and doors are sufficient if they are managed right. The breath of one or two horses is easily taken care of, but even in small stables such things are often neglected.

In this barn, the carriage room is closed off from the stable; which is right. The odor from the stable is a damage to the carriages and to the rugs. The stable should be warmer than the carriage room, so the door works right from both sides.

Sliding Hay Door

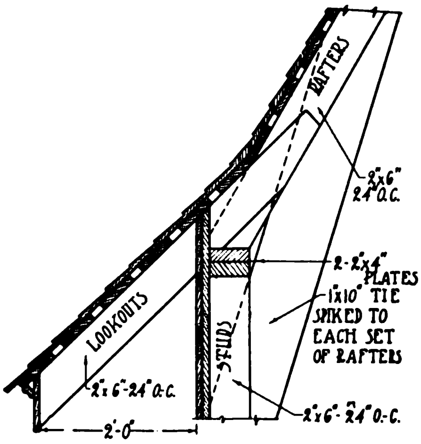
Considerable ingenuity has been displayed in the invention of hay doors that will open and stay open, and shut and stay shut at the proper time. The photo shows a hay door that will slide up and down in grooves. It is balanced with two counter weights with rope running over pulleys in sash weight fashion. It will stay in any position from wide open to close shut.

Sometimes, when the barn is filled with fresh hay, the door is left wide open for ventilation. It is big enough so a large fork full of hay may be swung through it without spilling. Find where such a door would fit in the old barn, then figure the cost with the lumber dealer.

Horse and Cow Barn—Design A230L

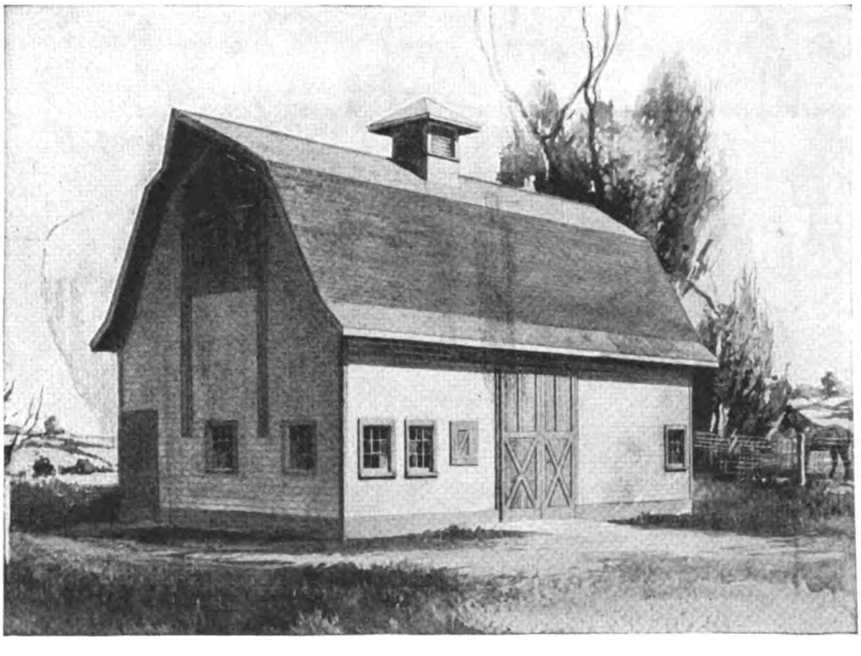
The size of this barn is 26 by 46 feet. The ground floor plan provides stabling for four horses and three cows in open stalls. In addition to these, there is a handy box stall such as every stock barn should have. It will be found very useful when one of the animals gets sick or needs individual attention for any purpose.

One splendid feature about this barn is the center driveway which gives easy access and easy egress. The plan gives the necessary manger room for convenience in feeding. It is a pretty good barn plan; in fact, just such a building as every farmer needs in addition to the large stock barn.



Detail of Ornamental Cornice for Gambrel Roof Barns.

Ventilators add to the appearance of the barn, and they are valuable on any barn where stock is housed. Mullion windows give it rather a distinguished look, besides they let in more light than a single window. The idea nowadays is to get more light into farm buildings, and it is a good fashion.



SMALL GENERAL FARM BARN OF NEAT DESIGN

Size 46 by 26 feet. Ground floor stables four horses and three cows. Hay is put in through counterbalanced vertical sliding door. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A230L.

"Walnut Hall," Famous Trotting Stallion, Sire of "The Harvester" (2:01), Owned at Lexington, Ky.

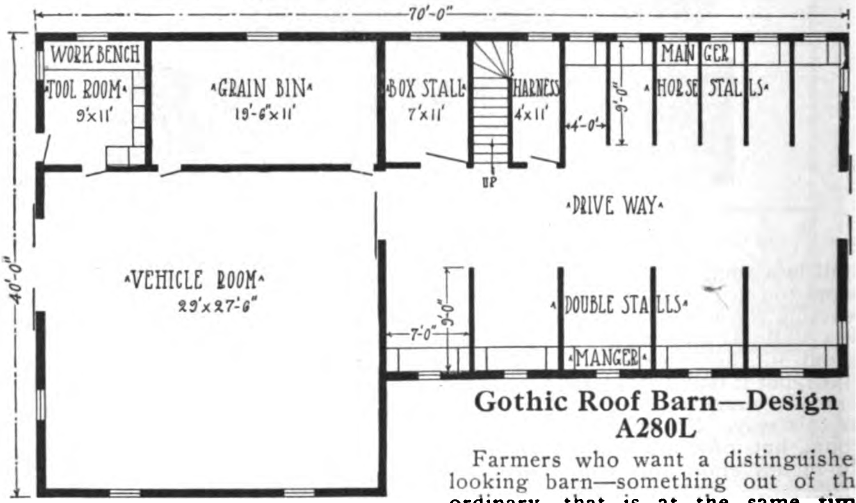
Convenient Horse Barn —Design A133L

Men who keep good horses will appreciate this plan. The arrangement of the stalls is convenient and there is a good carriage room in which to keep vehicles away from the stable part and out of the dust. Every farmer who takes pride in his horses likes to have a nice rig to drive, and it is impossible to have it without conveniences for keeping it clean. With a good carriage room and a good harness room there is no excuse for dirty buggies or an unsightly harness.

A feature of this barn that should attract special attention is the tool room. It is 9 by 10 feet in a front corner of the building, with two good windows for light. There is a general work bench with a vise on one end and there are boxes to hold tools and supplies on the dark side of the room. The granary will be large enough or not, according to the other buildings on the farm. While there is a large grain barn for threshing, a smaller granary in the horse barn seems to answer every purpose. The granary in this plan is placed right, because it may be shut off with two doors from the stable part, still it is not so far away as to make feeding inconvenient.

There is room overhead for a good deal of hay and straw. The hay carrier will bring the stuff from the back end pretty well through to the front.

It would probably be advisable to put a cement floor in this building, the full size of the stable part and the carriage room

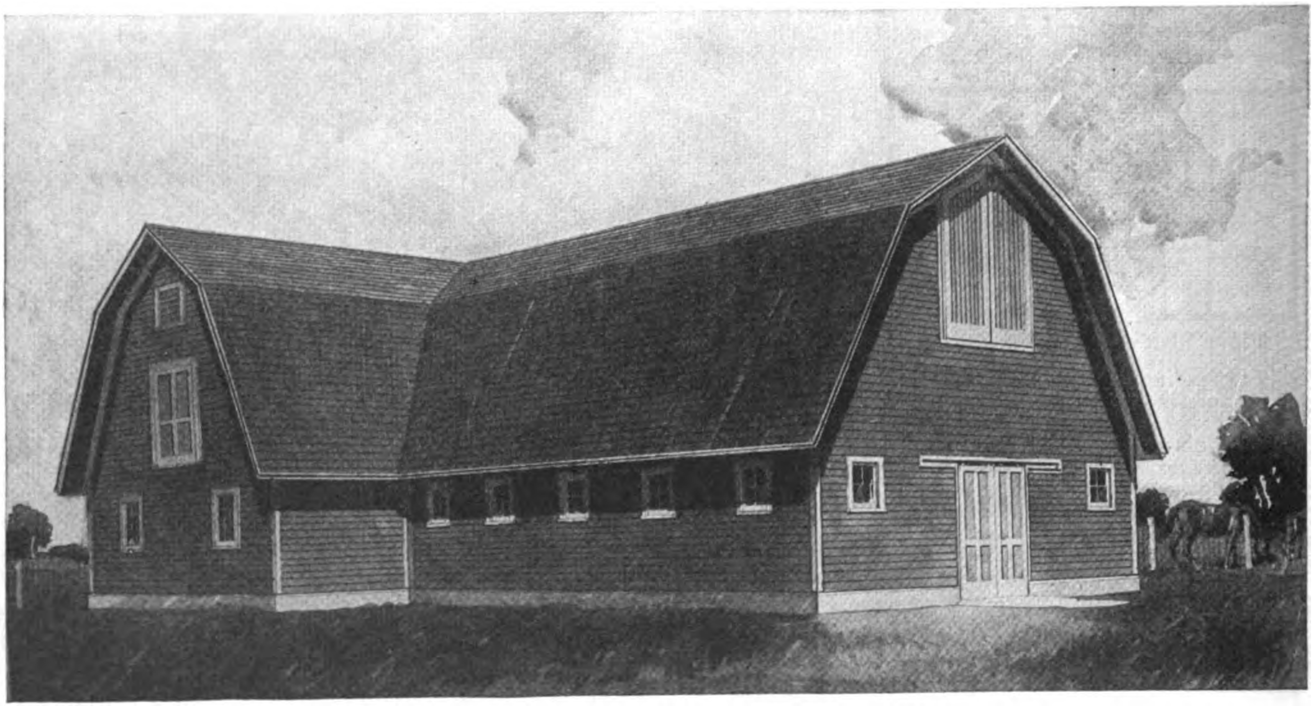


Floor Plan of Barn No. A133L

On a farm, the carriage washing should be done outside of the carriage house or barn. A wooden rack may be placed on a sloping bank, convenient to the hose hydrant, where the work may be done much better and the dampness is kept out of the horse barn.

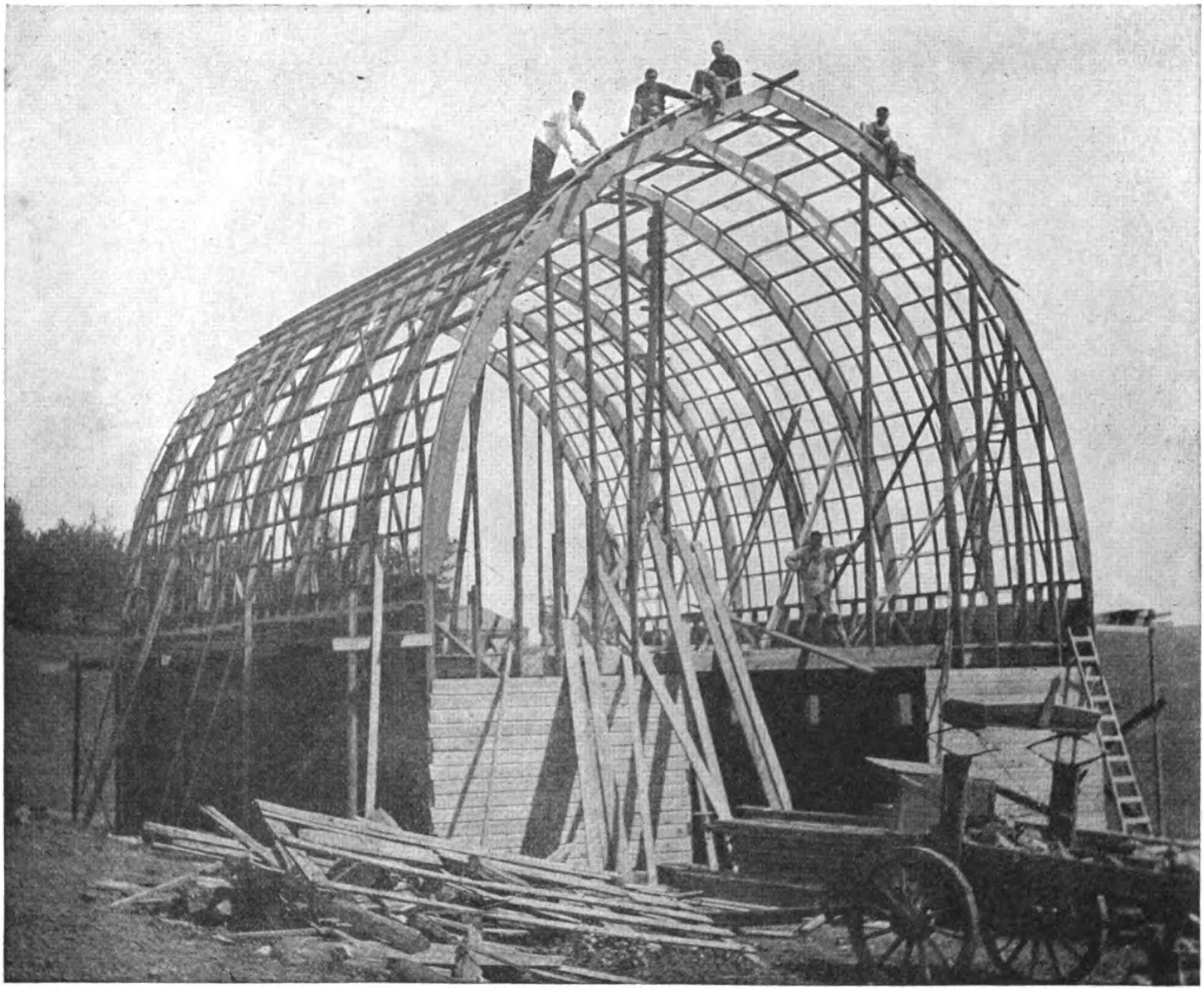
Gothic Roof Barn—Design A280L

Farmers who want a distinguished looking barn—something out of the ordinary, that is at the same time strong and practical—will like this Gothic roof barn. The rafters start from the plate and curve to the peak, where they meet a sharp point. The main rafters are placed 6 or 8 feet apart, according to the size of the barn, and they are tied together by 2x4's, running crossways. The 2x4's are set in ⅞ of an inch and are nailed and toe nailed like girths. ⅞-inch strips, 4 inches wide, are nailed to these girths, reaching from the plates to the peak to support the roof boards in lieu of the usual number of rafters. The outer surfaces of these strips come flush with the outer edges of the rafters. These girths and 4-inch strips



LARGE RIGHT-ANGLE HORSE BARN

A gambrel horse and vehicle barn 70 by 30 feet. Ell projects ten feet for extra vehicle room space. Stable proper has five double stalls, six single stalls and one box stall. There is big hay storage above. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00. When ordering, ask for Design No. A133L.



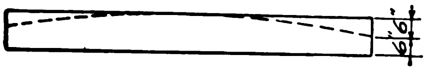
Photograph taken during construction in Washington of Gothic roof barn, Design A280L. Notice how main rafters are constructed; the curve is sawed out of 12-inch boards and these segments are nailed four together, breaking joints.

are for the support of the roof boards, which are put on in the usual way.

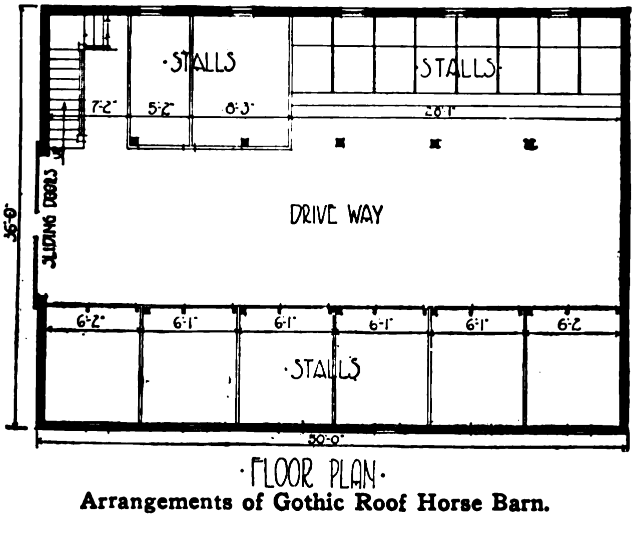
The rafters are built up of ⅞-inch strips, cut out with a band saw in segments to fit the curve. A pattern is first made, giving the curve, and the curve is marked on the barn floor and outlined with blocks. The rafters are built up to these on the barn floor before being hoisted into position.

An advantage claimed for this style of roof is that it is free from trusses or braces or cross timbers, so that the mow is left perfectly free and the shape of the roof gives it sufficient strength to stand heavy winds, notwithstanding the apparently light frame work.

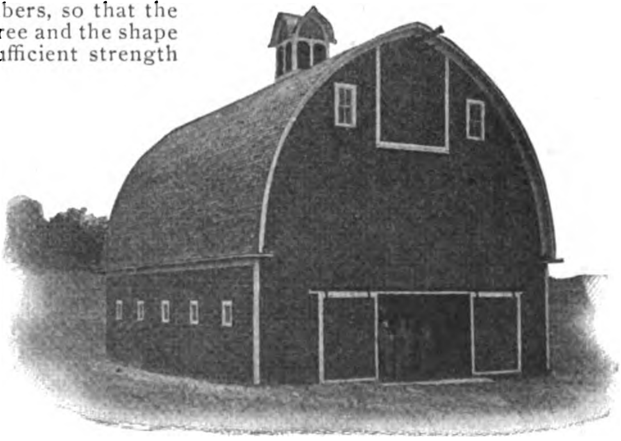
The lower part of this barn is built the same as other frame buildings with the variations according to the kind of floor plan required. The main features are large mow room, and a very neat, attractive general appearance.



Curved Rafters are built up out of ⅞ by 12-inch boards cut to proper radius.

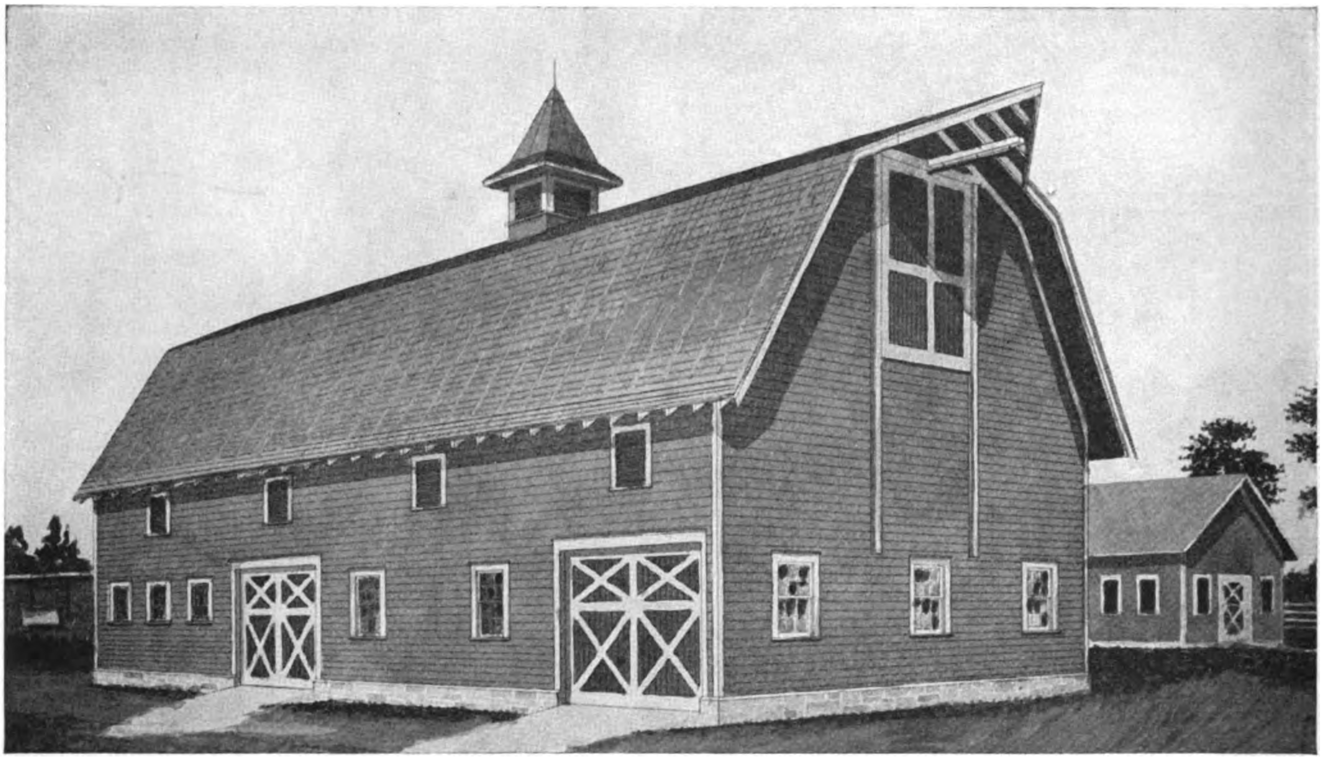


Arrangements of Gothic Roof Horse Barn.



GOTHIC ROOF HORSE BARN

A practical barn of striking appearance, 50 by 36 feet on the ground; has strong self-supporting curved rafter roof. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A280L.



EIGHTY-FOOT HORSE AND IMPLEMENT BARN

A big, well-built general barn that will take care of all barn needs for a good many years to come. The main floor is arranged for 10 horses and a big open space for wagons and implements. This will be partitioned off for stock pens as stock is acquired. Size, 80 by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A274L.

Horse and Implement Barn—Design A274L

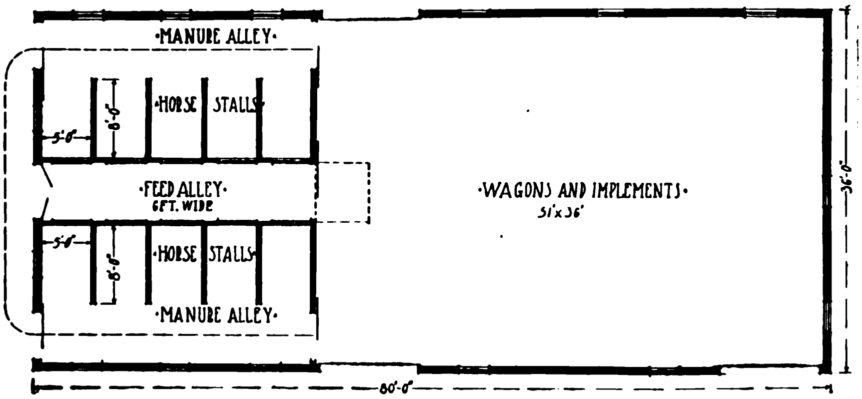
This design was gotten up for a young man just starting on a 40-acre farm. There were no buildings to speak of and he had no live stock except horses. He expected to start a dairy business the following year, but he first wanted to raise some clover hay and some ensilage corn.

The idea was to build a barn that could be used for his present needs and would work over easily for any purpose according to the manner in which his business developed. He figured that the cost of building a barn 36 by 80 feet would be very little more than to build smaller, and it would be much better and cheaper in the end.

The whole barn is floored overhead, which gives a splendid large mow for any kind of roughage. His intention was to utilize the one end opposite the horse stable for the storage of wagons, implements and anything else that he might happens to have that should be kept under cover .

The hay door opens by letting it slide down. The door is solidly built and works in grooves at the sides, and when it is shut it fits between stops at the top. There are two counter weights attached to cords that run over pulleys on the inside. These counter weights are just heavy enough to balance the weight of the door. The door is notched at the top to fit under the hay fork track.

This manner of making a hay door seems to solve all the difficulties. The only requirement necessary is to have it right in every particular, and this requires good workmanship.



Floor Plan of Horse and Implement Barn No. A274L.

Carrots for Horses

English horsemen often make a remark to the effect that a bushel of carrots in the winter time is worth as much as a bushel of oats to feed to horses.

They mean by this that there are certain properties in carrots that horses need, and that by feeding carrots with hay and other things, the carrots add to the variety and help materially in making up a balanced ration such as horses need and often lack in winter.

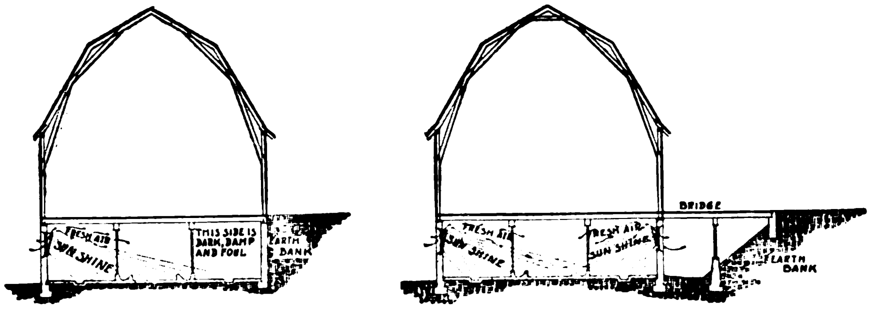
Modern Sanitary Bank Barns

The ordinary, old-fashioned stable under a bank barn was damp and warm when filled with animals in the winter time and it was damp and cool in summer. The warmth and coolness were agreeable, but disease lurked in both conditions of the stable atmosphere.

Since investigators have been looking into the germ troubles that domestic animals suffer from, attention has been directed to the objectionable features of these old-fashioned stable dungeons.

Anarchist germs prefer darkness to light. They thrive when the atmosphere is moisture laden. If the moisture comes from the breath of animals, they thrive all the better; it seems to act as a culture medium, to propagate the most undesirable of all cattle disease germs.

Sunshine and fresh air are the two principle preventatives. In this illustration the architect shows how to build a bank barn on sanitary prin-



WRONG WAY RIGHT WAY

Two Methods of Building a Bank Barn

ciples—the bank is kept back away from the barn wall, and the upper floor is reached by a bridge.

Bank barns are not necessarily objectionable. Usually, they are built on an elevation where drainage may be maintained in spite of the usual barnyard proclivities to get muddy and stay muddy. Besides offering better sanitary conditions, this plan provides the best possible means for establishing warm winter corrals having gates and passageways leading all the way around the stable section of the barn.

In grading the side of the bank, the earth removed to make this passageway may be dumped in scraper loads to fill the pot holes and to grade up the corrals, lanes, etc.

English Carriage House—Design A99L

Small artistic stables are more common in England than they are in the United States, possibly because the country is older and the people there have had more time to develop an artistic taste in such matters. An English gentleman likes to keep his carriage, or at least a neat cob and cart. He wants a good smart turn-out that presents a respectable, if not a dashing, appearance; then he likes to have things in keeping at home, so he maintains a very attractive carriage house and stable.

Some of these carriages houses are older than the proprietor; but you would never know it to look at them. They are kept in such repair and they nestle amongst the hedges and trees in such a pretty homelike way that you never think about their age or intrinsic value. You get the impression at once that they are proper; and proper goes a long way in England. You don't wonder that they have very neat stables just the right size and that they appear modestly retiring away to the back end of the pretty garden. It just seems to come natural. Their great, great grandfather or their double great uncle did the same thing long before they were born; so all they have to do is to follow precedent.

The English carriage house of today was built after hundreds of years of experimenting until the location of every plank, the size and direction of every door and window was determined without any further question of the possibility of the slightest improvement.

It is put back on the lot in the furtherest corner from the house. The approach to it is through an arched or pillored opening in a beautifully well-kept hedge. The driveway is not straight. English gardeners keep just as far away from straight lines as they possibly can. The stable also is partially screened from view by hedges, vines and trees. This is proper in England; it is good sense in any other country.

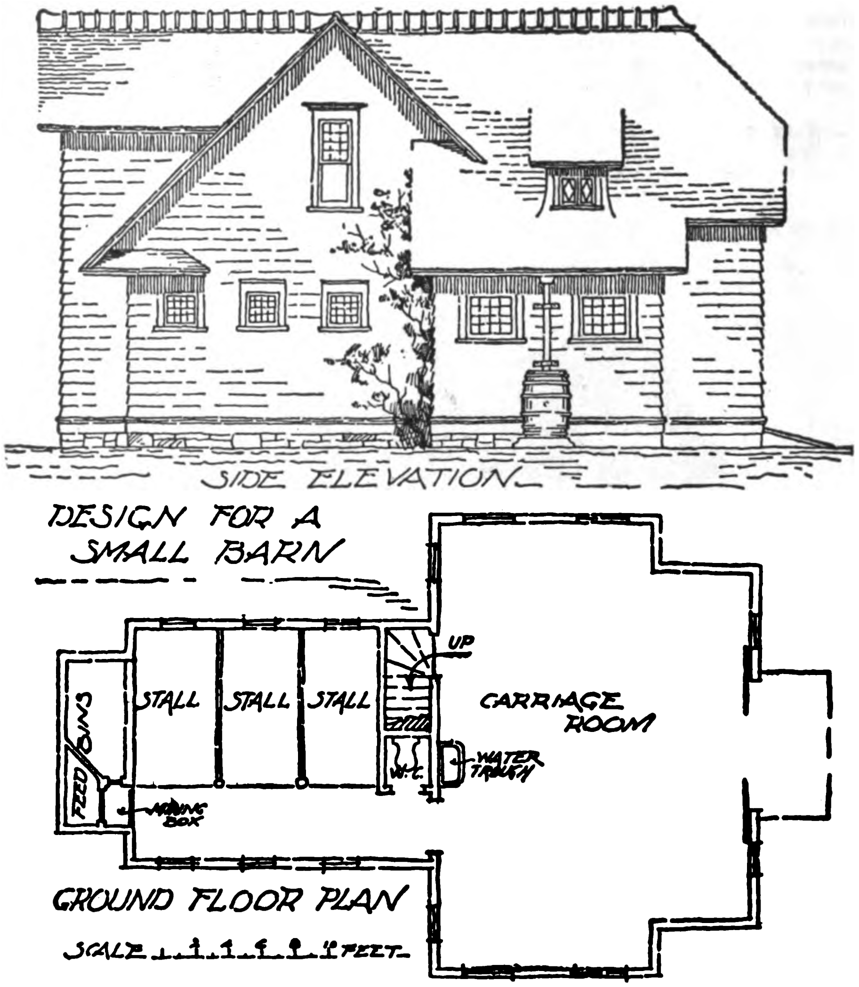
The plan (A99L) shows the general arrangement. There is a room partitioned off in the gable upstairs for the man. A stairway going up from the carriage room lands in this upper room. The feed bins at the back of the stalls connect with the storage bin on the upper floor by means of spouts, as indicated. There is a carriage room that is large enough to look well and to accommodate a number of vehicles. instead of having a harness room there are pegs for harness in a corner of the carriage room and the harness is covered with curtains hung to a wire overhead.

Breeds of Horses

The useful horse is comparatively modern, but its prehistoric ancestor, which had toes instead of solid hoofs, must have roamed the woods before the stone age.

ARABIAN HORSES. Oriental horses were imported into England bv King James I and used as breeders to improve the English Thoroughbred. Arabian horses date back more than 3,000 years to the time of Ishmael. Arabian and other Oriental horses have been used as breeders in the foundation stock of different horse breeds in the United States from the time that General Washington rode his famous half-breed Arabian stallion during the Revolutionary War. English and American stud books provide for the registration of Arabian horses. Probably all recognized breeds of trotting and running horses had Arabian blood in the foundation stock.

ENGLISH THOROUGHBRED. The foundation stock of this breed came from the Orient. The early importations were made during the early years of the seventeenth century. King James I established a race course which had much to do with the improvement of the Thoroughbred. These horses are recognized for their great prepotency, as well as



ENGLISH HORSE AND CARRIAGE HOUSE

Elevation and plan of very artistic little building. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A99L.

speed and graceful conformation. There are a great many splendid Thoroughbred horses and mares in the United States.

SADDLE HORSES. The best American saddle horses are said to be superior to those of any other country. The foundation stock was an English Thoroughbred, together with a Morgan stallion and a few Canadian pacing mares. From this combination the singlefooter and the easy-gaited riding horses were developed.

AMERICAN ROADSTER. There is a light roadster or driving type of horse, lighter than the coach horse, that is much in favor in some sections of the United States where the roads are good. These lighter horses get over the ground at a good clip and pull skeleton buggies with very little apparent effort. Speed and endurance are their chief qualifications. In regard to size, 15½ hands is the popular height for this type of roadster, and the best weight is about 1,000 pounds.

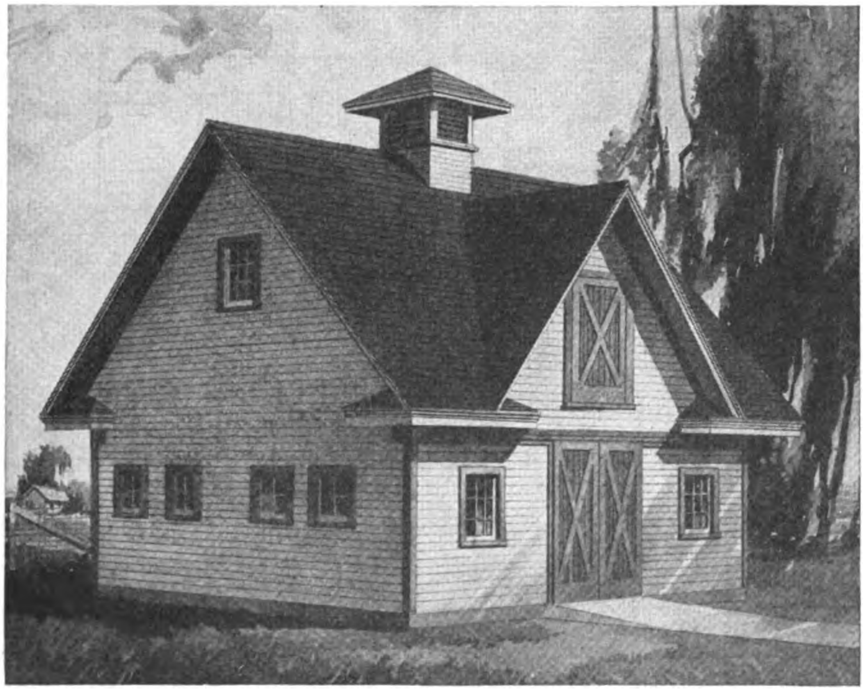
AMERICAN TROTTER. The foundation stock of the American trotter was thoroughbred runners imported from England to Massachusetts. Some also went to Virginia. This was in Colonial days. All trotting races at that time were done under saddle. The high-wheel, wooden trotting sulky came into use about the year 1810. The Messenger, Hambletonian and Mambrino families have been referred to as being especially prominent in establishing the American trotter. There also was a mixture of Morgan blood. There is no fixed type for the American trotter. So many different horses have been used to build up what is popularly known as the American trotter that breed type, as recognized in other lines of live stock, can hardly be recognized. The American trotter may be of almost any color, so long as its skin holds the conformation and size and the ability to get over the ground with the greatest possible dispatch. Some of the fastest trotters have not possessed great beauty, but generally speaking, the American trotting horse is graceful, and it must be intelligent. It requires a large brain to manage the mechanism necessary to travel a mile in a short space of two minutes.

MORGAN HORSES. Morgans are sometimes classed as a branch of the family of American trotters. The name came from the stallion named Justin Morgan, back in 1793, in Massachusetts. Old Justin Morgan was an all-around good, serviceable horse. He weighed less than 1,000 pounds and stood about 14 hands high. But in spite of his apparently small size, he was recognized as one of the greatest sires in his day. His ancestry on both sides traced back to the Godolphin Barb. The movement was started a few years ago to re-establish the Morgan breed. The work is being carried on at the Colorado Experiment Station. Carmon is the stallion used in these breeding experiments. Carmon is a descendant of Justin Morgan. These experiments are being watched with a great deal of interest, as the Morgan type of horse has long been recognized as a good general purpose horse, well adapted to the requirements of American farmers.

THE PACER. The pacer moves the two right legs forward together and the two left legs together. This movement lifts the body of the horse less than the troting movement. The theory is that a good pacer can put all its energy into speed while the trotter is spending considerable power lifting itself at every step. A good deal of time has been spent by horsemen figuring the amount of power required to lift the weight of a horse 3 or 4 inches every step of the distance in making a mile run. However, the theory in this case hardly works out in practice, because the same horse will sometimes trot as fast as he can pace. It is generally supposed that a horse paces naturally when his body is too short to move the legs conveniently. The conformation of some horses renders pacing easier than trotting. A good many horses trot at a slow gait, but swing into a pace when urged to make greater speed. Pacing standards are the same as trotting standards.

ARLOFF TROTTER. This is a Russian breed, little known in America. Like all other good breeds of horses, it dates back to Oriental stock. The legs are somewhat coarser and the feet larger than the American standards for speeding horses.

COACH HORSES. Coach horses might be described as a type fitting in between light-harness horses and draft horses. Coach horses should stand about 16 hands high and weigh from 1,100 to 1,300 pounds. Stallions may weigh up to 1,550 pounds. The conformation of coach horses is more after the draft type. They are round and plump, and when well cared for are very pretty. They are great favorites with people who like to use heavy carriages. Coach horses have the weight to handle such conveyances easily.



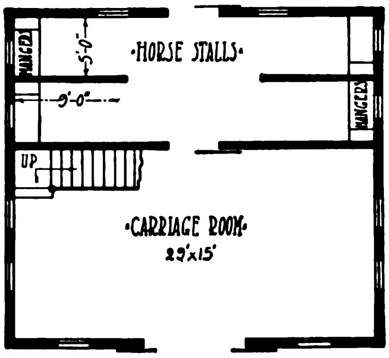
VILLAGE HORSE AND CARRIAGE BARN

An ornamental, attractive design that will accommodate four horses and full outfit of vehicles. There is considerable feed storage room upstairs. Size, 30 by 27 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A235L.

Suburban House Barn—Design A235L

A somewhat fancy barn that looks a good deal like a house is shown in this design. The shape of the roof and cornice, the windows and the general proportions, all combine to give it this effect.

It is a carriage house with four single horse stalls in the rear and a good carriage room in front. The loft provides for considerable storage room for hay and bedding. The size on the ground is 27 by 30 feet, with 9-foot studding. It is very much better to make the floor of cement. The cost is not much different and the cement is so much more durable and satisfactory.



Floor Plan of A235L

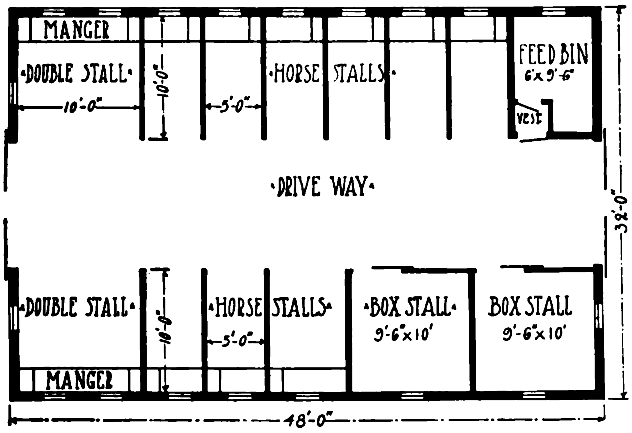
HACKNEY HORSES. Hackneys originated in the eastern part of England. The foundation stock came from Normandy and is credited to the Romans, but it is mixed with the Norman and English, so that the English hackney really is a type by itself, localized by English fashion requirements in the country where it was developed. The hackney is a heavy harness horse, having high knee action. It is essentially a show horse, of little real value.

FRENCH COACH HORSES. Napoleon used his influence to promote the development of a stout horse for army service. At the same time, it was intended to develop enough speed to make this animal interesting on the turf. There is no French coach name for horses in France. This term is used in America to designate a type of French horses. The so-called French coach horses are bred principally in the district west of Paris, in the section generally known as Normandy. The foundation stock was partially that of English sires and Normandy mares. It seemed to be the idea to develop a hardy breed, with all the speed possible.

GERMAN COACH HORSES. In the northwestern part of Germany, on the rich, lower lands, is where the German coach horses are bred in the greatest numbers. The foundation stock, like that of a great many other breeds, was brought together from many different countries and consisted of various types, but the idea seemed to be firmly fixed to develop an active horse of sufficient weight and endurance. Breeding animals are required to pass a givernment inspection. The German coach horses vary in type and conformation, which comes about through the German recognition of four types, each of which now has a separate stud book; one for the saddle or carriage horse of light build, and others ranging up to horses of considerable weight.

CLEVELAND BAY. In northwestern England the Cleveland Bays originated. The earliest record of this breed classifies them as pack horses. But little is known definitely in regard to the early breeding or foundation stock. The Cleveland Bay, as a general-purpose horse, is valuable to the farmer. It is also well liked as a carriage horse, and is used for that purpose in London. The color is always bay, although it may shade from light to dark. White or any other colored hairs are not wanted.

DRAFT HORSES. Draft horses may be traced back to the black horse of the forests of Flanders. A draft horse may weigh 1,500 pounds, or he may weigh 2,500 pounds. The tendency seems to be to get a draft horse as big as possible. At the same time, 1,600 pound is a heavy horse, and it is a question whether additional weight is any great advantage except for special purposes. Very heavy teaming for short distances may require horses of great weight to obtain the greatest efficiency.



Floor Plan of Barn No. A276L.

Twelve-Horse Stable —Design A276L

A low-cost horse barn, with storage for hay and bedding overhead is shown in design A276L. Where a good many work horses are kept, a barn like this will be found very convenient.

The construction is about as cheap as possible and still have a building that looks right when finished. The stalls are arranged for convenience in feeding and for cleanliness. It happens that double stalls and box stalls are not only convenient, but really necessary in a stable where so many horses are kept.

Stalls arranged in this way take less room than any other plan. They are so spaced that a window is placed in the middle of each stall. Horses, as well as other animals, need light and air, but a great many stable men do not appreciate the fact.

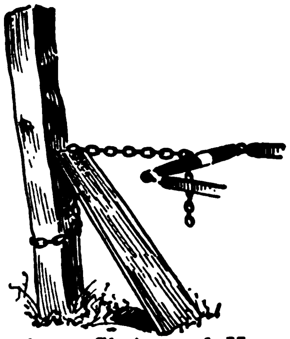
Building feed bins or granaries in horse stables requires considerable ingenuity. This feed bin plan has a vestibule and a feed chute. The bin may be filled clear to the ceiling without having a pound of grain in this little entrance, but the grain is always within reach, so it may be dipped up at any time for feeding.

The main quantity is shut away from a loose horse by two doors and the sliding boards that fit into the grooves in the second doorway. The bin may be filled from the floor above or it may be filled through this little vestibule.

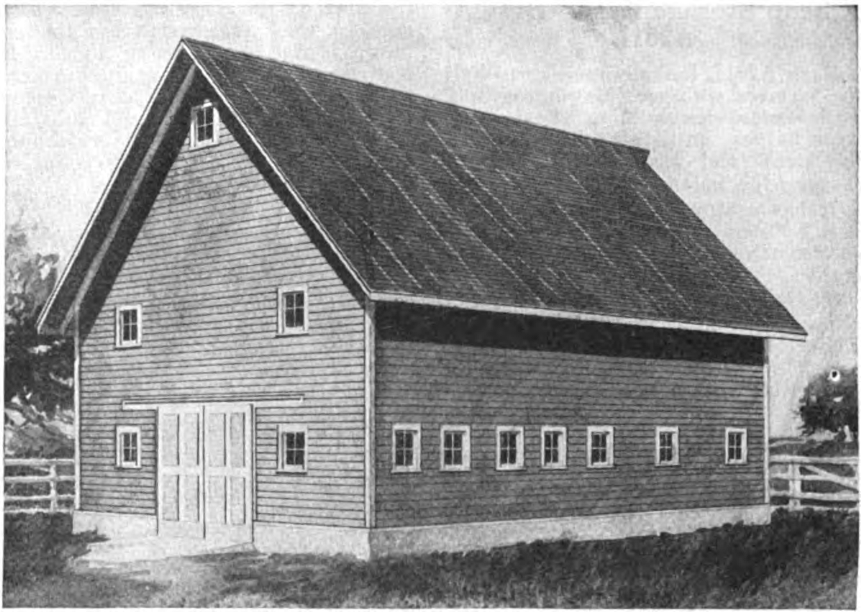
Unless the loft is filled with hay or bedding, the sacks would be hoisted and dumped in from the top. A horse fork track projects out over the large hay doorway, so that the hay toggle may be used for this purpose.

How to Pull Fence Posts

One of the simplest post pullers is made by setting up a 2 by 6 about 3 feet long, in a slanting position against the post to be pulled. Fasten a chain around the post just above the ground and run it over the board. Then hitch a singletree to the end of the chain; and one horse easily pulls out any ordinary post.



2 by 6 Chain, and Horse Pull the Post.



STRAIGHT ROOF HORSE BARN

A roomy horse barn 48 by 32 feet, with central driveway and stalls on both sides; two double stalls, nine single stalls, two box stalls and feed room are on the main floor. Considerable storage space for hay and bedding in loft above. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A276L.

"Puck," Champion Percheron Stallion Owned at Wayne, Ill.

PERCHERON. The Percheron gets its name from La Perche, the name of the district in which it was produced. No one seems to know much about the origin of the Percheron horse, but we all understand its present popularity. Starting as a general-purpose horse, it has been bred larger and more powerful, until it now stands at the head of the draft breeds, at least in number. Percherons were brought to the United States in small numbers at first, but recent importations have been very large. Percherons are now found in every State in the Union. The modern Percheron stands from 16 to 17 hands high and may be black, gray or mottled in color.

FRENCH DRAFT. While there is no recognized breed called the French Draft, it is customary to refer to heavy French horses as French drafters, and this general term has led to some confusion. It is generally well understood that all heavy horses in France are not Percheron. French draft horses are classified as Ardenais, Boulonais, Breton, Nivernais, Percheron and Picardy.

CLYDESDALE. The Clydesdale is a Scotch breed. Its present perfection is claimed almost entirely by Scotchmen. The history of this breed dates back several hundred years, and it makes good reading. Like all other good breeds of horses, it has been improved by outcrosses from importations from other countries. It is claimed for this breed that the feet are superior to all other drafters, and that the bone conformation is as near perfect as it can be bred. This breed is recognized generally as one of the leading drafters. In appearance it is pleasing, but its feet and legs look large, because of the extra long hair. There are a great many Clydesdale horses in America.

SHIRE HORSES. This is an English draft horse, known at one time as a great war horse. Shire horses have been carefully improved in recent years. It is no longer subject to the criticism of being coarse and slow. Like other breeds of horses, there is considerable difference in English Shire horses, owing to the preference of different prominent breeders. The Shire is the largest of British draft breeds. Stallions weighing from 2,000 to 2,200 pounds and 17 hands in height are common. The Shire has a great deal of long hair on its legs, which may be an advantage, as claimed by some, and a disadvantage, according to the opinion of others, especially in the winter, when the roads are muddy.

BELGIAN DRAFTER. As the name indicates, this breed originated in Belgium. As a distinct breed, it is comparatively new, but it is becoming very popular. The Belgian government encourages the breeding of this type of draft horse. One idea of the breeding is to have certain weights conforming to special measurements. The legs of this breed appear shorter than other drafters, probably because the body is deeper in proportion. The Belgian is an easy keeper and possesses great power. It is one of the heaviest draft horses, short of leg and deep of body.

SUFFOLK DRAFT HORSES. This is another draft breed of less ancient origin. It is sometimes called the Suffolk Punch. The foundation stock seems to have been principally Old English Suffolk, although some Normandy horse stock has been introduced. The original Suffolk horse was very much smaller than the present draft horse. It has small ears, broad forehead, large neck and a long, oblique shoulder, with great depth and circumference of body.

CHUNK. The farm chunk is a horse dealer's term for undersized drafters of a misfit patern. They may weigh from 1,100 to 1,500 pounds.

Breeds of Ponies

Ponies are horses that have for generations been bred and raised in hilly countries, or in other sections sparsely supplied with feed, so that the original size decreased to meet the old law of supply and demand. This, in brief, gives the reason for small horses, or as they are usually called, ponies. The history of the different kinds of ponies is somewhat similar, because of this general principle. As a general classification, a pony is under 14½ hands.

Cheap Storage Barn—Design A281L

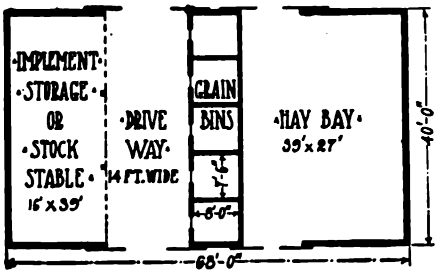
Barn A281L looks home-like to half the farmers who see this photograph. It is useful for holding sheaf grain from harvest until threshing time and for straw and grain and implement storage the balance of the year.

It has a stone wall foundation and it is built on a raise of ground within easy reach of the stock barn or dairy stable.

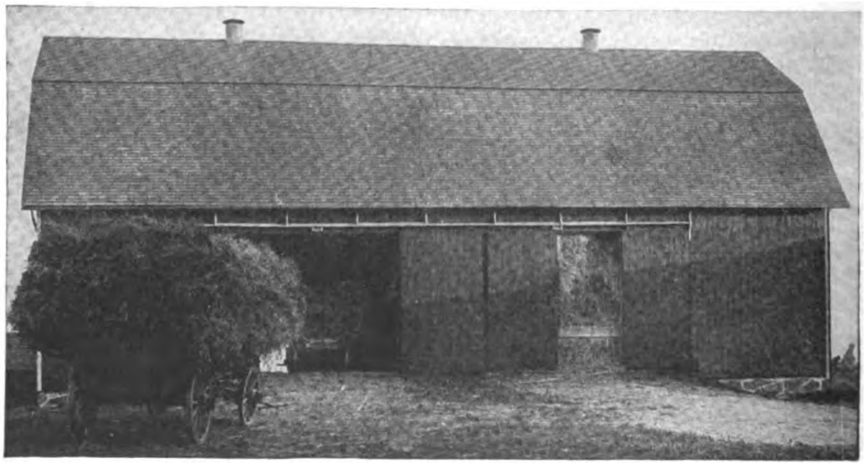
There are grain bins built like boxes along one side of the threshing floor. These bins are 8 feet high and 8 feet wide, built of 2 by 4 for framework and ceiled with No. 2 matched flooring.

A girt runs along over the top of the bins on the driveway side, which may be used as a grain bin timber, but it is not necessary to do so. It is better to make the grain bins entirely separate from the barn, leaving a clear space at each end to walk through. The grain bin floors should be made of concrete, on account of rats and mice.

The plans for this barn call for plank frame construction, because every stick may be bought at the local lumber yard without any delay, and for the further reason that plank frame construction has proved satisfactory for barns of this type.

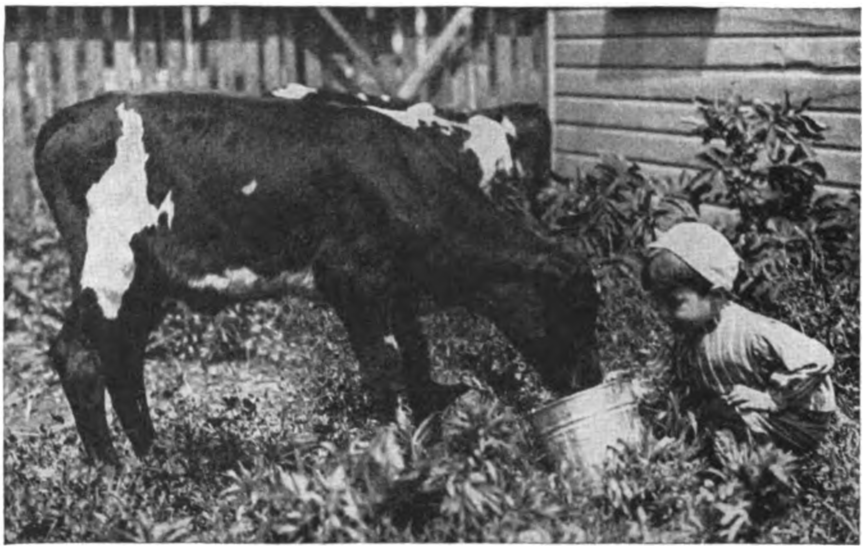


Floor Plan of Barn A281L



LOW-COST STORAGE BARN

An Inexpensive, Common Sense Grain or Hay Storage Barn. Size, 68 by 40 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A281L.



FEEDING THE CALF

More play than work, this is a chore enjoyed by both boy and calf—it is good for them and makes 'em grow.

WELSH MOUNTAIN PONY. This type resembles the small Arabian. The height is from 12½ hands to the limited height, according to class.

WELSH PONY. As the name indicates, this breed originated in Wales, and for a long time has been very popular. They vary a great deal in appearance, and are classified by some writers in four classes.

POLO PONIES. There is no regular recognized breed of polo ponies. The selection of polo ponies is largely a matter of the choice of the owner.

EXMOOR PONY. This breed of ponies has developed in Devonshire, England, on the moors. It closely resembles the Arab in conformation.

DARTMOOR PONY. This is an old breed of English ponies raised in Cornwall. It is supposed that they ran wild in the old English forest.

ARAB PONY. A small Arabian horse, under 14½ hands.

INDIAN PONY. This term usually applies to small American bronchos and mustangs. They are hardy and know how to rustle for themselves. There is a great variation in type, owing to the different sections of the country where they are bred.

HACKNEY PONY. These are simply hackney horses under 14½ hands.

SHETLAND PONY. These hardy, hairy, interesting boys' playmates come from the Shetland Islands, off the north of Scotland, where they have had their home for hundreds of years. In type, the Shetland pony resembles the diminutive draft horse. The ponies of different island have different conformations.

MULES. The mule dates back to the earliest historical periods. It is a cross between a jackass and a mare. Mules are recognized as being tougher than horses, and for this reason they have become very popular for certain kinds of work. The price of mules seems to be continually advancing. Improved breed methods account for this in a measure, because the average mule is much larger than formerly. The real merit of the mule probably accounts for its increasing popularity, without any reference to fad or fashion.

Cheap Stock Barn with Covered Shed—Design A189L

This barn consists of main part, 28 feet wide by 52 feet long, 18 feet to the eaves and 35 feet to the ridge. On the north is a low sheep shed, 40 feet long by 14 feet wide, and extending east of this is another low addition, 26 feet long by 18 feet wide, the north half of which is used for horse stalls, hog house and corn crib, the corn crib being built over the hog compartment. The south half of this extension is an open shed. Also an open shed extends along the east side of the main building and is equipped with mangers for six horses, to be used when extra teams are at work on the farm, as at threshing time.

A driveway runs through the main building from east to west, on one side below which are horse stalls and corn crib. On either side of the driveway above are hay mows which hold about fifty tons of hay, which is taken up from the center inside.

North of the middle horse stalls and crib are the cow stalls, a 3-foot feedway running between them.

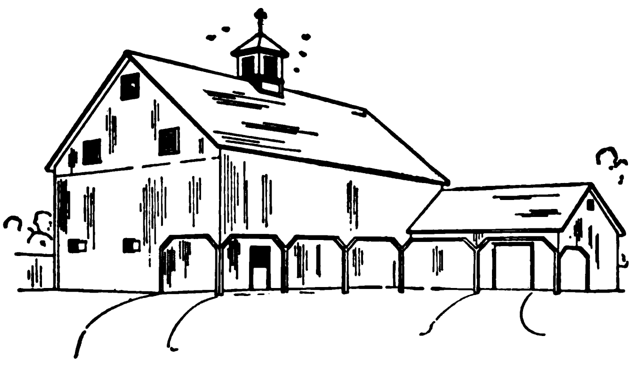
The barn stables eleven horses, eight cows, thirty sheep and ten hogs. All of the feeding can conveniently be done under one roof.

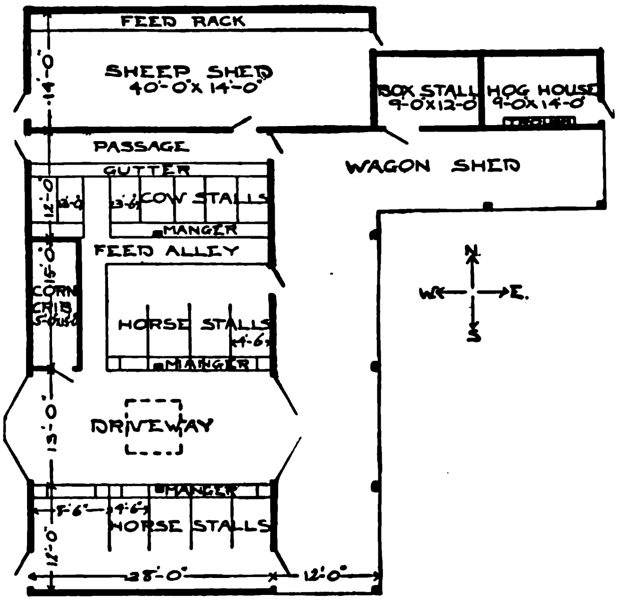
To Obtain Government Bulletins

Each State Agricultural College publishes bulletins of experiments in farm crops, live stock, etc., and these bulletins are free to the farmers in the State. Write to the Director of the State College or University, and ask for a bulletin on the subjject required. Sometimes catalogs are issued, giving a list of bulletins in alphabetical order.

The U. S. Department of Agriculture at Washington, publishes a year book which may be obtained free upon application to the Congressman of your district.

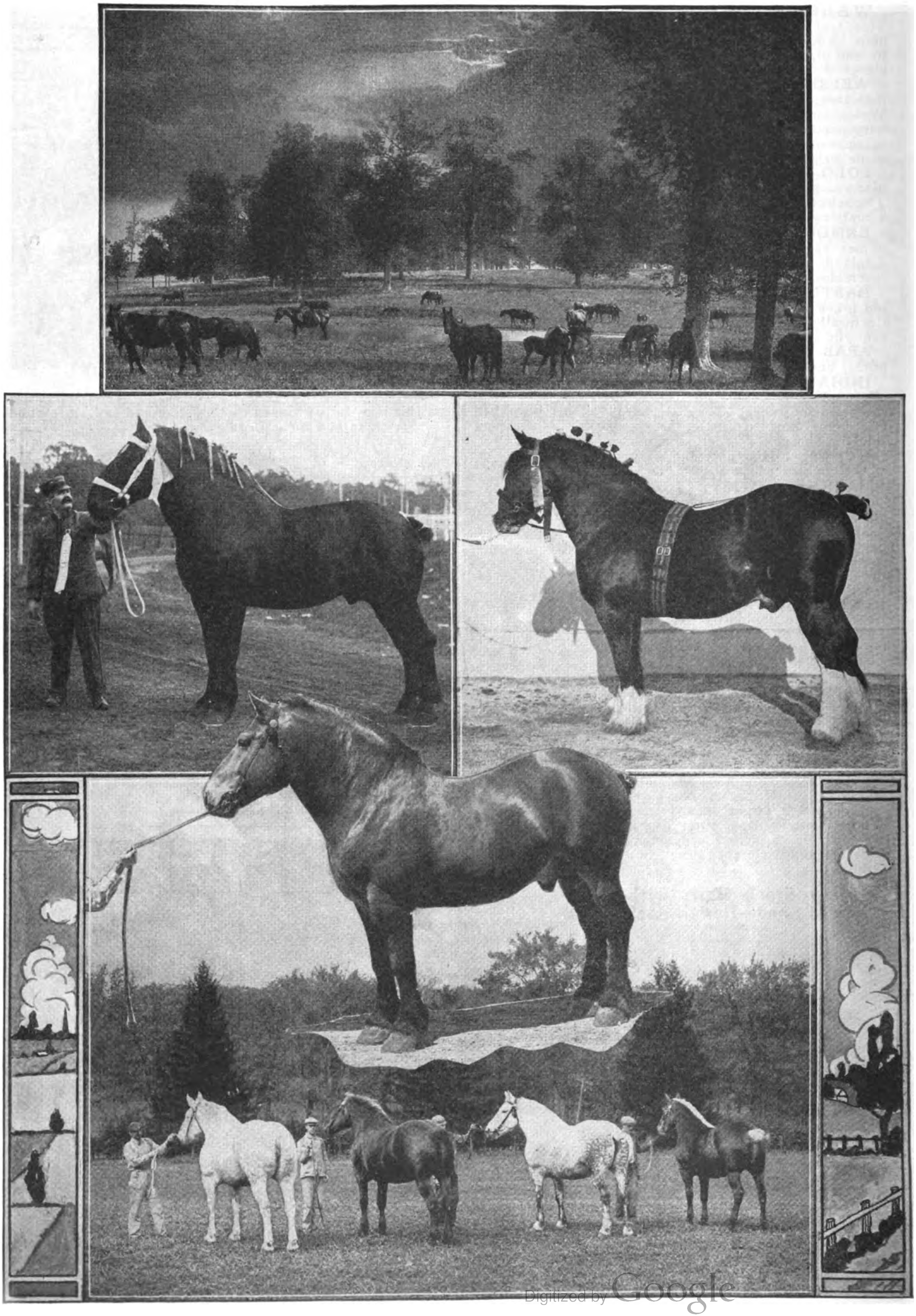
A great many government bulletins are issued by the Department of Agriculture, some of which are free and others have a small price attached, ranging from 5 cents to 30 or 40 cents each.





LOW-COST, POPULAR STYLE STOCK BARN WITH COVERED SHED

Perspective view and floor plan of cheap, yet well arranged barn. Size, 28 by 52 feet, with 12-foot shed along one side. At the far end are sheep shed, hog house, etc. We can furnish complete set of blue-printed working plans and typwritten specifications for only $5.00 per set. When ordering, ask for Design No. A189L.



A PAGE OF PRIZE HORSES

FAT STOCK

How to Breed, Raise, and Market

Plan of a Bull Pen and Care of the Bull

The harmless bull is the chap that kills people. Every day some paper publishes an account of a fight between some farmer and a bull that hitherto had always been on friendly terms with the owner. While some bulls live to old age without becoming cross, no bull should be trusted after he reaches maturity.

The plan of bull pen here shown has been very successfully used by men owning ugly bulls. The bull must have exercise to remain in proper health and vigor. For this reason, a yard is provided outside of the stall. To get into the yard and get out safely, this peculiar form of gate was invented and has been in use for a number of years. It is a gate that is always shut, even when it is open, so that it is next to impossible for a bull to get out, unless he is deliberately let out. The attendant has a chance to dodge him when he acts ugly. It is also a measure of precaution, because bulls kept in this way are not so likely to become cross.

Figure with your lumber dealer about this addition to your stable. It won't cost as much as a broken leg. It is not a good plan to shut a bull off by himself, he gets lonesome and morose. Human prisoners go insane if kept in solitary confinement.

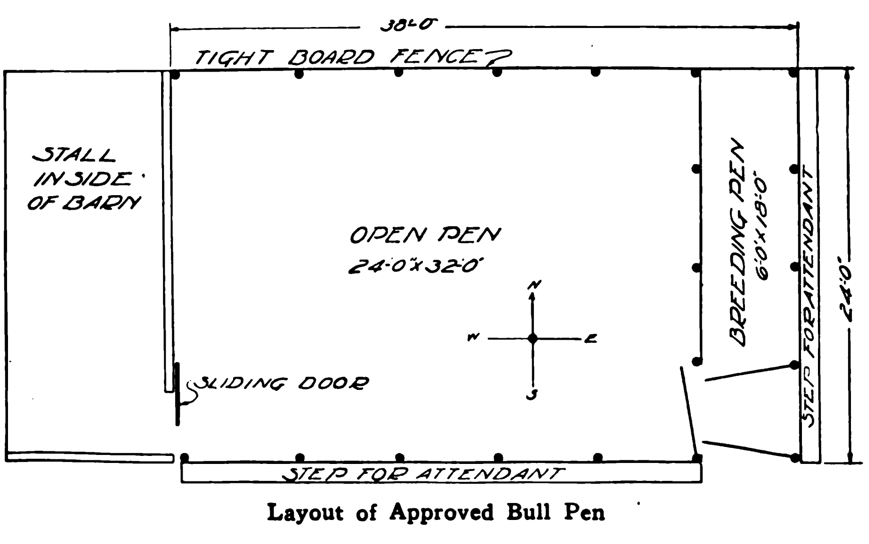
Pure Water for Stock

The time will come when owners of live stock will be required to keep their animals out of running streams. Running water purifies itself if given time, but most streams are subject to contamination to such an extent as to render the water unfit for use.

Live Stock in Leading Countries

Following are given the total number of cattle, hogs and sheep in these countries in 1913 except where otherwise stated.

	Cattle	Hogs	Sheep
United States	56,527,000	61,178,000	51,482,000
Canada	7,103,702	2,697,819	2,393,950
England	4,991,208	2,270,154	13,736,438
Scotland	1,245,553	131,584	6,798,807
Ireland	4,932,625	1,060,360	3,620,724
Wales	725,736	190,582	3,393,848
France (1911)	14,552,430	6,719,570	16,425,330
Germany (1912)	20,158,738	21,885,073	5,787,848
Italy (1908)	6,198,861	2,507,798	11,162,926
Spain (1912)	2,541,112	2,472,416	15,725,882
Au.-Hun. (1911)	17,787,883	14,539,749	13,475,159
Russia (1909)	35,781,000	11,035,000	46,989,000
Belgium (1911)	1,823,000	1,136,000	235,722
Denmark (1909)	2,253,982	1,467,822	726,879
Netherlands (1910)	2,026,943	1,259,844	889,036
Sweden (1910)	2,747,526	957,128	1,003,921
Norway (1908)	1,094,101	318,556	1,393,488
Roumania (1908)	2,585,000	1,709,205	5,104,000
Switzerland (1911)	1,443,371	569,253	159,727
Mexico (1902)	5,142,457	616,139	3,424,430
Cuba (1910)	3,074,509	358,868	9,982
Argentina (1912)	28,786,168	2,900,000	80,401,486
Brazil	25,000,000	....	....
Colombia	2,800,000	2,300,000	746,000
Chile (1911)	1,640,322	160,050	3,537,728
Paraguay (1908)	5,500,000	23,900	214,060
Uruguay (1908)	8,192,602	180,099	26,286,296
Australia (1911)	11,358,777	1,109,221	92,897,368
Brit. Ind. (1911)	113,991,079	....	27,116,336
Asiatic R. (1909)	15,053,000	1,802,400	38,017,000
Africa	19,471,926	1,804,568	53,646,662
Japan (1911)	1,384,183	279,101	3,357



Layout of Approved Bull Pen

Unfortunately, streams run in the low places, which form a natural drainage and overflow for all sorts of refuse, so that the natural proclivity of water to purify itself by rolling and tumbling and mixing with the air is offset by artificial interference.

Because it is customary to let live stock into streams, some farmers are thoughtless enough to let the live stock wallow in the farm water supply. It is a great mistake. Domestic animals, including the human race, require pure water to drink. The greatest possible precaution should be taken to keep the supply as good as possible.

On some farms there are springs, the flow of which may be diverted from their natural course and carried to a suitable place for a water tank. If a stream of water is trapped and the farm supply carried away to one side to where the ground is firm, it will be easy to make a permanent stock pond. In most such cases, it is better to carry the water in pipes placed below plow depth and below frost; otherwise the stream is in the way. Besides, it is impossible to protect an open stream running across a field.

The farm water supply is important enough to receive very careful attention. It often means the difference between health and disease, between profitable and unprofitable live stock.

Farm Stock Pond

A stock pond is an insurance against drought, so far as supplying live stock with their daily allowance of water is concerned.

The building of a water pond is not a difficult undertaking. Most soils may be puddled so that the water will not leak out. Even sandy soils may be made water-tight in this way, but it may be necessary to add a little clay or muck.

Where expense is no object, the bottom may be covered with gravel stone pounded in and very thin cement mortar poured over the stones and troweled down.

On most farms it would be necessary to fill the pond by pumping, but gasoline engines are used on a great many farms, and it would pay to have one on every large farm.

It depends on the contour of the land, whether a stock pond can be placed high enough so that the water may be piped to the house and barn. This is a great convenience and should be done, unless the expense is too great.

In providing an intake to the stock pond, it is better to elevate the intake pipe, so that the water may fall through the air for several feet. The end of the pipe may be fitted with a rose nozzle, so as to divide the water as much as possible for the purpose of airing it. The air and sun both act as purifiers of water.

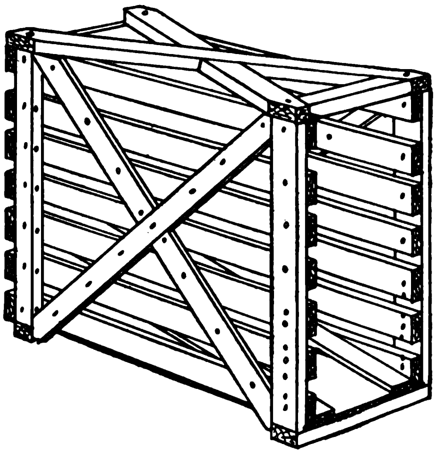
There are times occasionally when a stock pond is almost invaluable. Farmers in certain parts of the Middle West, during an exceptionally dry time, have suffered severe loss for lack of water for their live stock. It is a great convenience at all times, if the delivery pipes are so arranged that the water may be conveniently obtained.

The plan of allowing live stock in the pond is very objectionable. The pond should be bordered by a nice grassy slope and a fence of the woven-wire type, with the lower meshes so small that not even a chicken could get into the reservoir. The farm pond should be guarded as closely as the water supply for a city.

The lumberman can supply the best Portland cement for the stock pond basin, and also the wire fencing and posts to protect the pond.

Breeding Crate

The drawing shows a very good plan for a breeding crate for hogs.



Serviceable Breeding Crate

It is made of 2 by 4 pieces, bolted together with $\frac{5}{16}$-inch bolts. About six dozen bolts are necessary. The cost is not very great, but it makes a strong crate that will be good for twenty years. The crate is permanently closed in front and cross-braced to prevent wrecking. There are diagonal cross pieces at the top, and across the bottom for the same purpose.

The crate will be loaded into the wagon, and men are not very careful in dropping it out, but a crate made like this, and thoroughly fastened together with bolts, will stand a lot of abuse without wrecking it to pieces.

There are two inclined pieces on the inside, as shown in the drawing, and there are a number of holes at different heights for an iron rod.

Value of Stock Shelter

Evaporation of rain from water-soaked animals is a serious matter in cold weather. Evaporation is a cooling process. It requires a large amount of food to furnish the necessary heat to dry off animals after a cold rain.

Evaporation continues while the rain is falling. Sometimes in the fail of the year rain keeps coming, day after day, so animals out on pasture are wet a great deal of the time.

Live Stock Diseases, Ailments and Parasites

All kinds of domestic animals are subject to disease. As a general thing, young stock that is well cared for in every way, is disease resistant. As animals become older, troubles may develop that are not looked for in the young.

Diseases of Cattle

TUBERCULOSIS IN CATTLE. Bovine tuberculosis is almost the same as consumption in the human family. Cattle are more subject to tuberculosis than other domestic animals. The so-called tuberculin test is considered to be an accurate means of testing tubercular animals, especially in the early stages of the disease.

Sanitary conditions are known to be a safeguard against this most dreaded disease, but the fact is well known that there are tuberculosis animals in some of the best herds in the country.

It affects cows more than bulls or steers. Calves are seldom troubled with this disease. Even calves from tuberculosis cows will grow into healthy cattle if kept away from their mothers.

HOOK WORM DISEASE OF CATTLE. This is a disease of the south. It seems that young animals are more susceptible to hook worms than older ones.

There are number of species of hook worms, which affect sheep, dogs, cats, foxes and the human race. These are all different species. So far, southern cattle have not been very seriously affected, but there is danger of the difficulty increasing. Scientists are at work devising means to control it.

CATTLE BLOAT. Bloating is a serious catle trouble. It is usually due to alfalfa or clover pasture in the spring when animals are not accustomed to it. It may be prevented by feeding before turning on pasture.

MILK FEVER. Milk fever is sometimes very troublesome when cows are fresh. It may be relieved by forcing air into the udder. The remedy is dangerous unless skillfully done.

WARBLES. This is a parasitic disease, caused by the eggs of the gadfly. The eggs may be destroyed by spraying.

CATTLE MANGE. Cattle mange or scabies, also called range itch and cattle itch, is a disease of the west and northwest.

Scabies is a contagious skin disease, caused by a parasitic mite. It lives on the surface of the skin, causing pimples, exudation and scaling of the skin. Later, the hair comes out and the surface is covered with gray brownish scabs. The animals lose flesh and become weak and anaemic.

"High Style," $5,000 Poland China Boar

The cattle mange mite is closely related to the sheep scab mite, but is not interchangeable. Sheep retain their own parasite and the cattle do the same. Scabies seldom affect cattle that are doing well.

The government requires that cattle shall be dipped as a remedy and preventative. The remedy is flowers of sulfur, 24 pounds; unslaked lime, 12 pounds, and water, 100 gallons. This solution is boiled until the sulfur disappears from the surface and the color is of a chocolate or liver color.

ANTHRAX is caused by a specific bacilli which may attack any domestic mammal. Cattle and sheep seem to be the chief sufferers, and for the most part, it seems to attack animals that run upon low, marshy land of a mucky character.

Animals affected recover if taken to higher ground, where the land is solid and dry. Damp ground will retain the germ of anthrax for years, so persistent is the germ that it is carried over from year to year, so that animals dying from anthrax should be very thoroughly burned. The bacilli seem to flourish in stagnant water, but die when thoroughly dried out.

The disease frequently takes the form of apoplexy, the animals reel and fall and emit bloody liquids. Where the disease is common, some

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

animals become immune. Out-breaks of anthrax should be investigated at once by the best veterinarians.

Diseases of Swine

THUMPS. When pigs are born healthy, the first real trouble that is likely to overtake them is thumps. Thumps affects the heart and stomach, and is caused by overfeeding and lack of exercise.

HOG CHOLERA. Hog chorela is the most destructive of all hog diseases. It is the most difficult to cure, and so far, it seems impossible to prevent getting hog cholera in the herd. However, hogs kept on pasture the greater part of the year and housed in sanitary, well-kept hog houses during the winter are less likely to have cholera than hogs kept in the ordinary way.

SWINE PLAGUE. Swine plague is another serious disease which may be confused with hog cholera, as it seems to be of a similar nature. Swine plague affects the lungs more than cholera.

Hogs are kept free from worms by permitting them to run to boxes containing salt, charcoal, sulphate of iron and wood ashes.

MANGE AND LICE. Mange is a skin trouble caused by parasites. Mange may be cured by dipping once a week for three weeks with the lime —sulfur dip. Dip hogs only in warm weather.

Diseases of Horses

..Horses, either old or young, are likely to be taken with acute indigestion which is almost always caused of improper feeding.

COLIC is somewhat of the same nature. These two diseases worry farmers and cause heavy losses. Unfortunately, indigestion and colic seem to select the most valuable horses. Colds and influenza epidemics, sometimes called distemper, are prevalent in the neighborhood in the fall and winter. They are more or less contagious. Simple remedies will control the milder types.

If horses are kept in good condition and free from worms, they are not likely to be troubled with any of these diseases, although acute indigestion and colic come to horses that are apparently in the best condition. Heavy feeding is the cause in most cases.

HEAVES is a disease of the respiratory system supposed to be caused by a cold when the horse is in a run-down condition. Prevention is much better than cure for any of these troubles.

On general principles, if the farm live stock is properly fed, housed, and cared for in a sanitary way, the losses from disease are very light; but it requires good management and eternal vigilance.

When real disease attacks any kind of farm animals, the proper thing is to get the best veterinarian within reach, and spend enough time with him to thoroughly diagnose and understand the complaint and the proper treatment.

MILLET DISEASE OF HORSES. In some sections of the country, millet is grown for horse hay. It causes a sort of rheumatic lameness, together with kidney trouble. These are the first symptoms of what is generally known as millet disease.

If millet is fed for some time, it affects the joints, producing lameness. Experiments have been tried, cutting the millet at different stages of growth, but it seems that it is not a safe hay to feed to horses. If con-

Twenty-Eight-Foot Barn—Design A270L

A barn 28 feet square is not very large and it is not very expensive, but such barns are needed on small farms, and it often happens that they come in mighty handy on some of the larger farms.

The design of this little barn is about as simple and inexpensive as it is possible to make it and have it look right when finished. A straight roof costs less than a curb roof for the same size building, because it is all straight work. Rafters all go up at the same time, are fastened in place and the roofing follows quickly. It is the jobs with the odd corners and angles in the building that take up the time and cost money. They may be worth all they cost; but sometimes the actual dollar expense is a serious handicap when a farmer is building his barn.

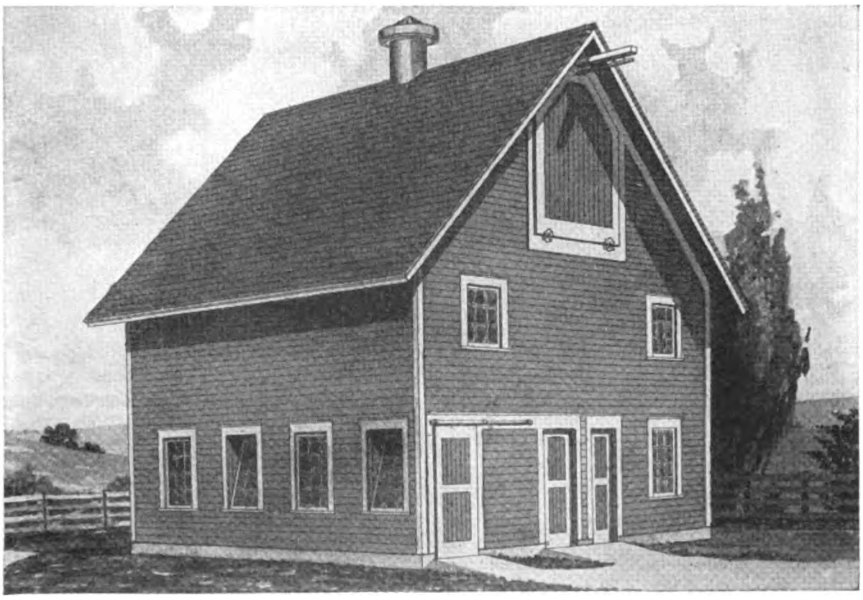
There is a hay door in this little barn that will appeal to some farmers who have had trouble with hay doors. This one hinges at the bottom and is held shut at the top with a rope that works over a pulley. The rope hangs down inside and is looped to a nautical cleat, sailor fashion. This rope is the only fastener to hold the door shut, and it is the only fastener necessary because it is a good one when rightly put on.

At haying time, the door is swung down from the top and it hangs down until the hay is put in and until the hay has passed through the sweating process. This is one reason for large hay doors. A mow needs air for some weeks after haying, if there is much new hay packed away in one mow. While this little barn is modest in appearance, there is room enough to hold considerable hay.

There are no divisions between the horse stalls in this little stable. If the horses are not well enough acquainted to stand together, they can have poles put in between them. Horses do not care to fight across a pole.

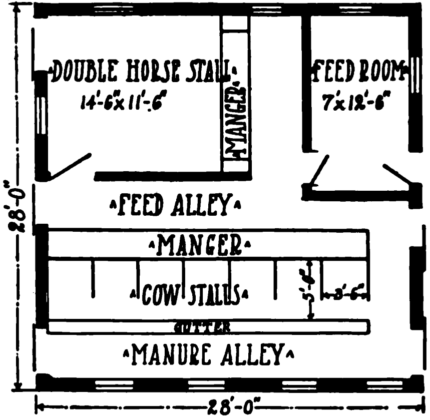
The stable is built with mangers, stalls, feeder alley and manure gutter, all in the usual way, but the ventilation of the cow stable depends upon the manner in which the windows are constructed.

The windows are arranged to open in at the top so that air from the outside will follow up to the stable ceiling. This is a good plan, as it admits fresh air without striking the animals directly. The ventilator flue in the center comes down through the ceiling over the stables so the foul air is drawn off in that way. Although the building is small, and inexpensive, the same attention to sanitation is carried out that larger and more expensive plans call for.



SMALL GENERAL BARN

A simple low-cost design to stable 7 cows and a team of horses and to give considerable feed storage space. Dimensions 28 feet square. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A270L.



Floor Plan of A270L

tinued for any length of time, it is very likely to lead to serious consequences.

BLIND STAGGERS OF HORSES. This peculiar disease is known also as mad staggers and sleepy staggers. The first symptoms are a desire for water, with difficulty in swallowing, and the horses usually refuse food.

The cause of one outbreak in Kansas was traced to mould on small, damaged corn, caused by extremely dry weather. Other cases of staggers have happened in localities where there was much inferior or low grade corn.

MANGE IN HORSES. Horses on ranges are affected with mange, but the trouble is not universal in the sense that includes sheep and cattle. However, in some sections of the country, horses are dipped to cure the mange and in other places to prevent it.

Diseases of Sheep

There are about twenty diseases and parasites that affect sheep. Most of them may be controlled by dipping, by worm medicines, and by frequent change of pastures.

NODULE DISEASE OF SHEEP. A parasitic worm causes nodules in the intestines of sheep. Frequent changes of pasture is the most practical preventative, but medicinal treatment is necessary when the disease gets established in a flock.

TICKS AND WORMS. The most frequent trouble with sheep is caused by worms, and the best preventative is frequent change of pasture to break up the life cycle of the parasites. Dipping prevents scab, ticks and lice. The health of the sheep in other ways is controlled by proper feeding.

Foot rot of sheep is caused by a germ; it is contagious. Proper feeding and sanitation will prevent most of the sheep troubles.

Poultry Diseases

Farm poultry is singularly free from disease so long as the birds are permitted to forage for their living. They get the necessary variety with fresh air and exercise.

POULTRY LICE AND MITES. Every farmer knows the difference between lice and mites and how to fight them. It is only a question of doing the job thoroughly.

Rabies or Hydrophobia

Rabies affects, principally, animals of the dog or wolf family; but all warm blooded animals, including human beings, may be inoculated with the germs of this terrible malady.

The germ is in the saliva, and is inoculated into the victim through tooth wounds or lacerations. It is transmitted only by animals that are actually carrying the disease.

There was an old belief, which of course is wrong, that a person receiving a dog bite, might go mad at any future time the dog should contract the disease later.

Only about 15 per cent of those persons actually bitten die of rabies; the other 85 per cent are either cured or do not contract the disease. A good deal depends upon the depth

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Horse Barn and Grain Storage —Design A268L

This design was built on a farm where the stock consisted principally of horses. There was some small stock, calves principally, that required a small winter stable with feed rack accommodations. There was no granary on the farm, so one side of the stable was planned for grain bins, feed rooms, and the loose stabling of the calves.

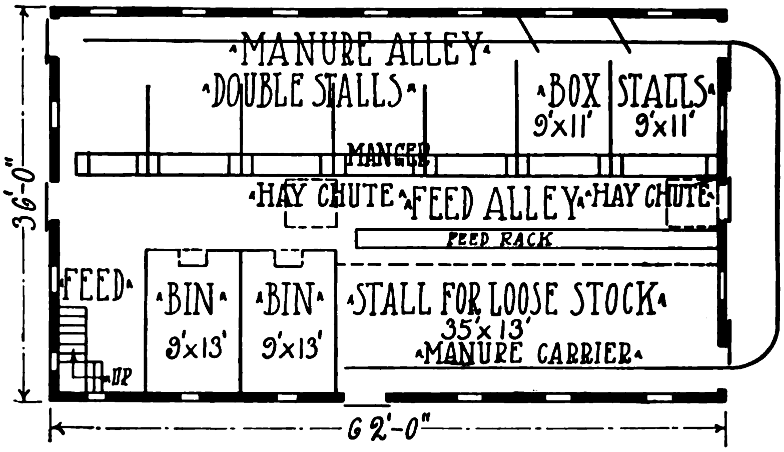
The farmer wanted all double stalls for his horses, but finally decided that two box stalls would be a great convenience at times.

One thing he insisted on in particular, and that was the horse stable proper, must be shut away entirely from the grain. To carry out this idea, drop doors to the grain bins were arranged on the outside. Loose boards fit into grooves inside of these doors to be put in place as the grain piles up. Inside, the bins are boarded up to the ceiling, so the only entrance is from the outside, but each bin has a chute, and a drop door box at the bottom for shoveling or for feed measuring.

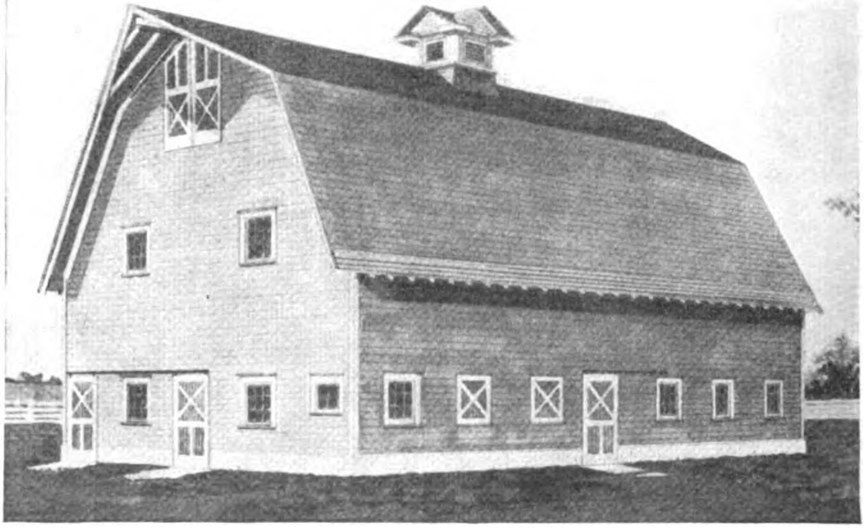
The owner of this barn at one time had a valuable horse ruined by getting loose at night and eating too much grain, and he does not propose to take any chances with this proposition.

The way these grain bins are arranged for filling and emptying, it would be almost impossible for the most mischievous horse to get even a smell of more grain than the owner dishes out to him. Even the shovel chute bottom is protected by hand doors that have no contrivance for keeping them open, except to put a stick under them when grain is being shoveled out to put in the stacks. For feeding time, the man lifts the door with one hand and reaches in with the other to fill the measure. The grain runs down as it is taken out, but there is only a shovelful in the hopper at any one time. It is so constructed that even with the drop door open a horse can hardly get his nose in far enough to reach the grain.

Some men might think this is extreme precaution, but a farmer who loses his most valuable horse through carelessness usually kicks himself into a first-class crank.



Floor Plan of Horse Barn No. A268L



LARGE GAMBREL ROOF HORSE BARN

Horse and stock barn 62 by 36 feet, arranged with 5 double stalls and 2 box stalls along one side; 2 grain bins and 35 by 13 foot pen for loose stock on the other. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design No. A268L.

and location of the wound. Sometimes copious bleeding will float out the injected virus.

When a person is bitten by a dog or cat, there is sufficient danger to warrant immediate and thorough treatment. The wound should be encouraged to bleed as much as possible for a few minutes, and it may be cauterized, or the person bitten may be hurried at once to an institution where the Pasteur treatment is understood.

Live Stock Poisoning

Poisoning troubles are seldom heard of when feed is plentiful. Animals instinctively avoid poisonous plants. Most live stock are pastured on cultivated land, where poisonous plants are not tolerated, but there comes a time when severe droughts affect forage plants and poisonous weeds show up green and tempting to hungry animals.

Larkspur often appears prominent on ranges that have been over stocked. Water hemlock also gives trouble under such conditions.

Poisoning of domestic animals sometimes occurs after a dry time on cultivated farms, and it is difficult to account for the losses. The tender tips of alfalfa, immediately after a hard freeze in the fall, may produce symptoms of poisoning, but animals affected in this way usually are somewhat emaciated or in a run-down condition because of worms.

Veterinarians have puzzled over such outbreaks in different parts of the country, but they generally trace them to causes other than pasture poisoning.

Good System of Ventilation

The modern builder would as soon think of building a barn without a roof as to build one without a cupola ventilator. Farmers realize, as never before, that practically all farm buildings require ventilation; and if it is a stock barn, especially where dairy cows are kept, the ventilation is perhaps the most important feature of the entire building.

A good deal of study has been given this barn ventilation problem. Several good systems have been worked out. The accompanying diagrams show one system. The essential points required for perfect results with this system of ventilation are as follows:

The room must be as near air tight as it is practical to make it. Walls and ceilings should be insulated from outside temperature by lining with heavy building paper, matched lumber or other non-conducting material. The foul air vent shafts must start near the floor and run up at least 2 feet above highest point of roof. Should be smooth on the inside. Can be changed from oblong to square or round, but area must remain the same the entire length. It should be as near vertical as possible and avoid all sharp bends and horizontal runs. It should be air tight and insulated from outside temperature. Should have rain-proof top, and intakes should be located behind cows, so that all foul air will be drawn away from the cow's head.

Fresh air ducts should also be insulated, smooth, inside, of about equal area the entire length and outside air intakes should be as far below the outlet at ceiling as is practical, for reason that if intake was level with outlet in the ceiling, the warm air near ceiling would escape, reversing the flow of air exhausting the heat in place of letting in fresh air.

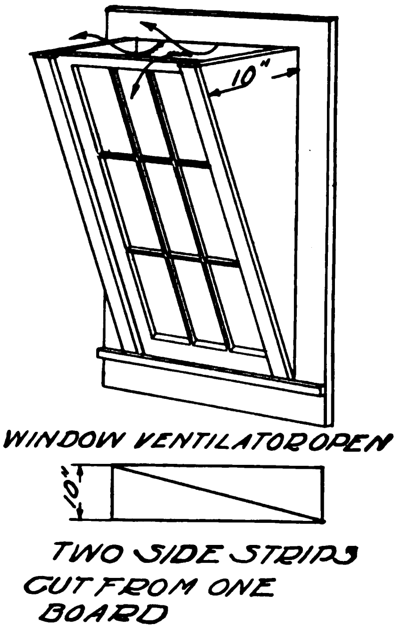
Fresh air should always enter the room near the ceiling, and entrance of air should always be located in front of cows, so the air will flow towards the cow and form a current, passing beyond the cow, towards the foul air shaft, absorbing all impurities in its path.

Fresh air ducts should be well and equally distributed along the ceiling of feeding alley. A number of small ducts are better than one large duct of equal area. Foul air vents can be made larger and less in number.

Foul air vent ducts take up least amount of room and are cheapest to build, if built into the outside walls, as shown in this sketch, and fresh air ducts can be run to center of ceiling (between joists) as well as not. For these reasons we recommend cows be stanchioned, facing in.

A Staple Window Ventilator

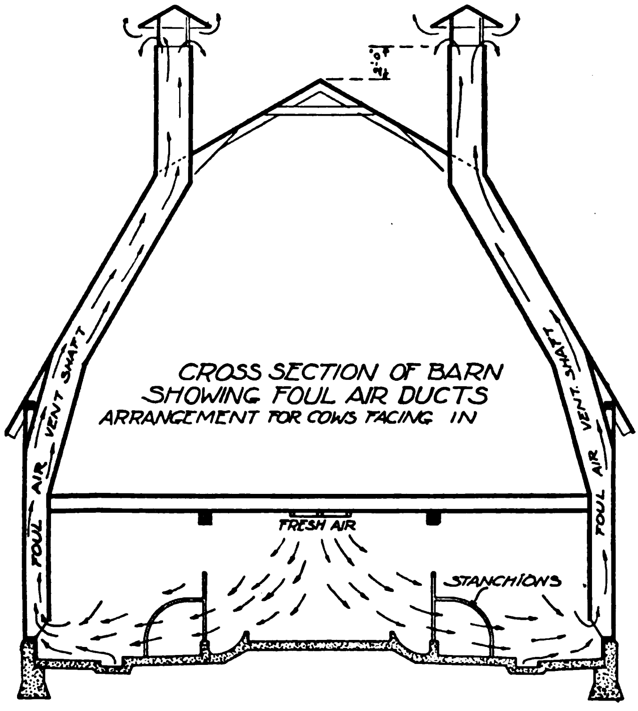
A very good form of ventilator, and one that is probably cheaper than any other of equal efficiency, is shown in the little drawing. It works best in windows where a single sash only is used, although the upper sash of a double window may be dropped back into brackets in this way.

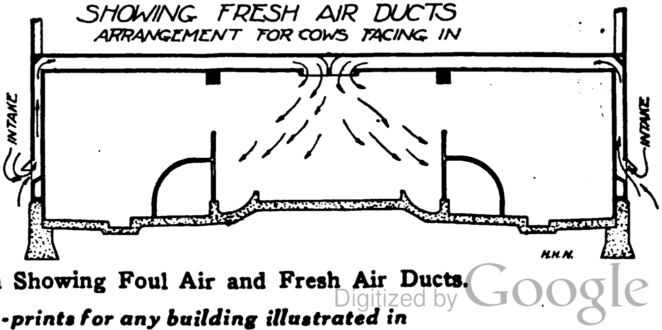


Details of Simple Window Ventilating Scheme.

The sash may be arranged to swing outward for summer use and inward for winter use. When the sash is dropped out, it takes air out of the stable and acts as a cooler. When the sash is swung in, the air comes in from outside and is shot up against the ceiling. The idea is to let air into the stable without creating a draft against the cattle. If window brackets are used, a chain is fastened to the sash and hooked, to a nail to hold the window at any desired angle. Sometimes if the sash drops back as far as the brackets will permit, the air current will be too strong.

Sheet-iron brackets are manufactured and sold by lumber dealers to fit up windows in this way. Some of these brackets have patent attachments for holding the sash in any desired position.



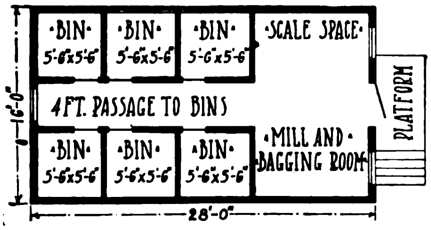


Sections Through Modern Dairy Barn Showing Foul Air and Fresh Air Ducts.

Seed House and Grain Storage —Design A107L

A solid building designed for the storage of seeds and feeding grains is given in design A107L.

The foundation is concrete, with a concrete floor banked well up from the surrounding ground. The building is studded with 2x4s in the usual way, but the ceiling boards are nailed to the outside of the studding, and the clapboards are nailed over the tongue and groove ceiling. The tongue and groove for this purpose must be of good quality. It is carefully put on and is carried up to the top of the plate.

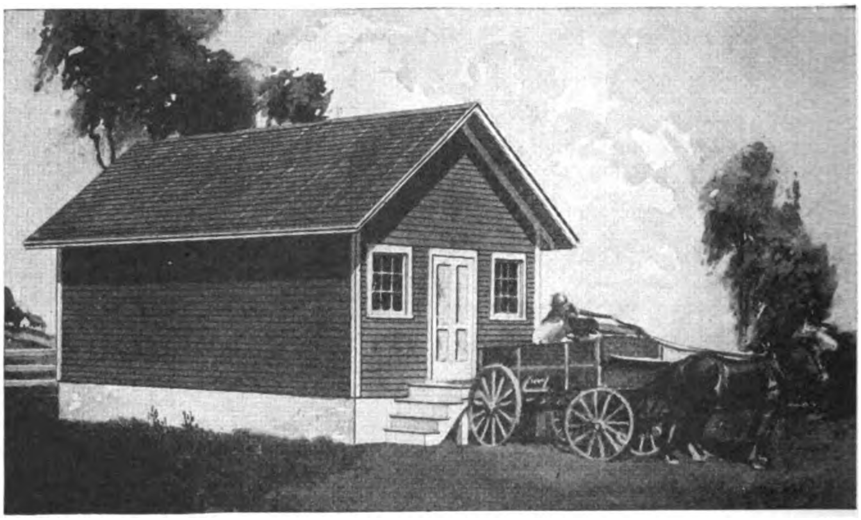


Floor Plan of Grain House A107L

The reason for building in this way is that there may be no harbor for rats or mice.

The idea of having small bins is to keep certain grains separate for seed. The grain may be taken out of one bin, run through the seed grader and the best put into another bin. After taking out the heaviest grain for seed, the other is probably put in sacks and left in the sacking room until needed for feed. There is no ceiling overhead, the bins extend up to the roof.

A grain house built on this plan is very convenient, and, being rat-proof as well as damp-proof, it makes a good place to keep grain that the owner is particular about.



GRAIN HOUSE ON CONCRETE FOUNDATION.

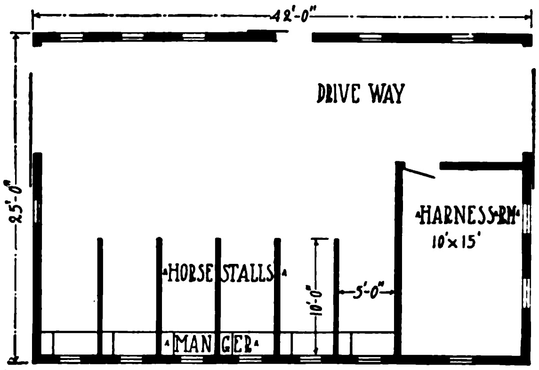
Well arranged granary, containing six bins, besides scale, mill and bagging room. Size, 28 by 16 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design No. A107L.

Small Livery Barn—Design A138L

Sometimes farmers retire to town to live, but do not care to sell their horses. Farmers so disposed may build a small livery barn of this kind and rent out horses as occasion demands and make enough to pay their keep. The profit in such cases often comes from buying and selling. They can keep horses cheaper than the village man, because they get feed from the farm.

The building is designed for convenience without running into a great deal of expense. The six stalls would be sufficient to accommodate the horses, and the harness room is large enough to hold the harness and a sleeping cot. When a man has good horses, he feels much more comfortable when someone sleeps in the building with them.

No attempt has been made to supply storage for vehicles, but this could be easily provided by building a shed extending out from the harness room end of the building. This would be the entrance from the street, naturally the manure would be removed from the other door to keep the business end of the stable clear from litter and rubbish.

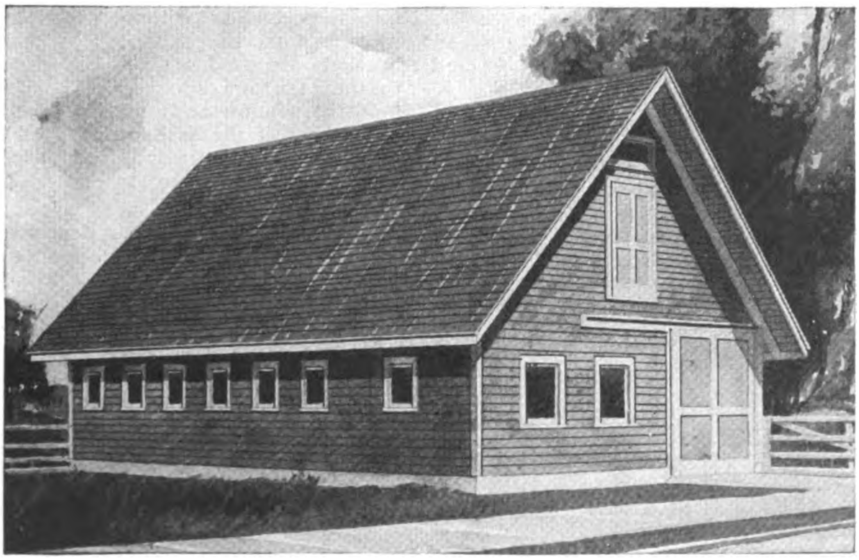


Floor Plan of Livery Barn No. A138L

A farmer would have room enough in the loft for hay and bedding, because he could get in a load or two at a time from the farm.

There have been instances where farmers have built up a nice little livery business in this way without going to very much expense. Sometimes the state veterinarian establishes a branch office in town, and this would be just the place. Sometimes stock buyers want some stable room and a place they can call "headquarters" while they are in the vicinity.

If the lot is big enough, yarding facilities are provided sometimes with shed, feeding rack and watering trough. Such accommodations attract stallion men and the business grows until the farmer finds he didn't run away from work when he moved to town.



VILLAGE LIVERY BARN

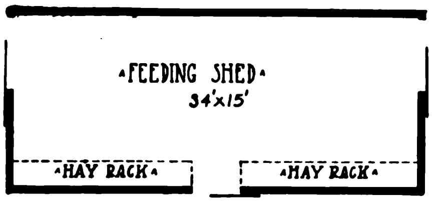
Neat, well-planned barn 42 by 25 feet to stable 6 horses. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A138L.

A lady entered a hardware store and said to the first clerk she saw: "Give me a mouse trap, quick; I want to catch a car."

When a lawyer gets busy and works with a will, it is almost certain he will break it.

Feeding Sheds for Colts—Design A121L

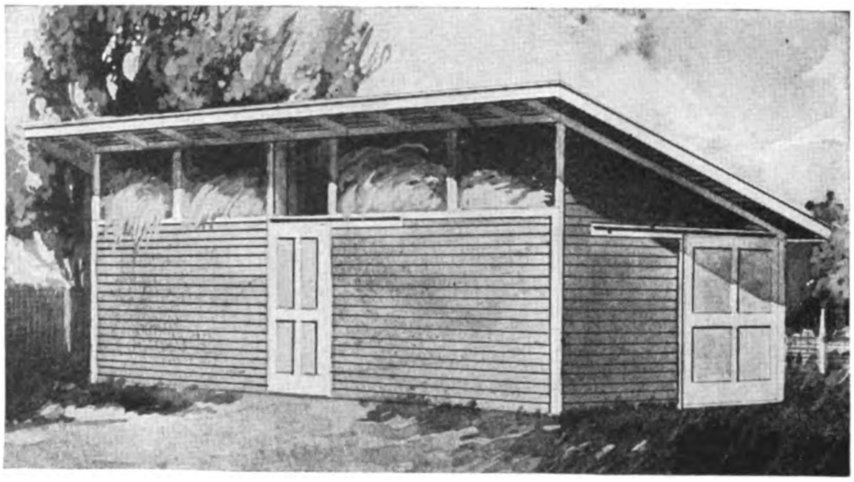
In the southwest corner of a paddock on a New York stock farm is a shed built like this for the use of colts in the winter time. The front of the shed is placed even with the barnyard fence. The paddock fence extends north from the corner of the shed next to the door. This fence arrangement was designed especially to help drive the colts in through this wide door in the corner of the paddock and barnyard fences.



Floor Plan of Colt Shed A121L

The feeding arrangement in this shed is very convenient. The hay rack extends pretty well back and is fastened to the rafters. The rack is big enough to hold a load of hay. Under the rack is a solid plank trough to catch the leaves that sift down from the hay rack. This trough is used for feeding grain.

The shed is kept well bedded and the colts are shut in every night when it is cold or stormy. There is sufficient light through the front opening because it filters in through the partly filled hay rack, and this arrangement seems to work very well, as there are no windows to break. Colts are a little different from other kinds of stock, because they are so mischievous.



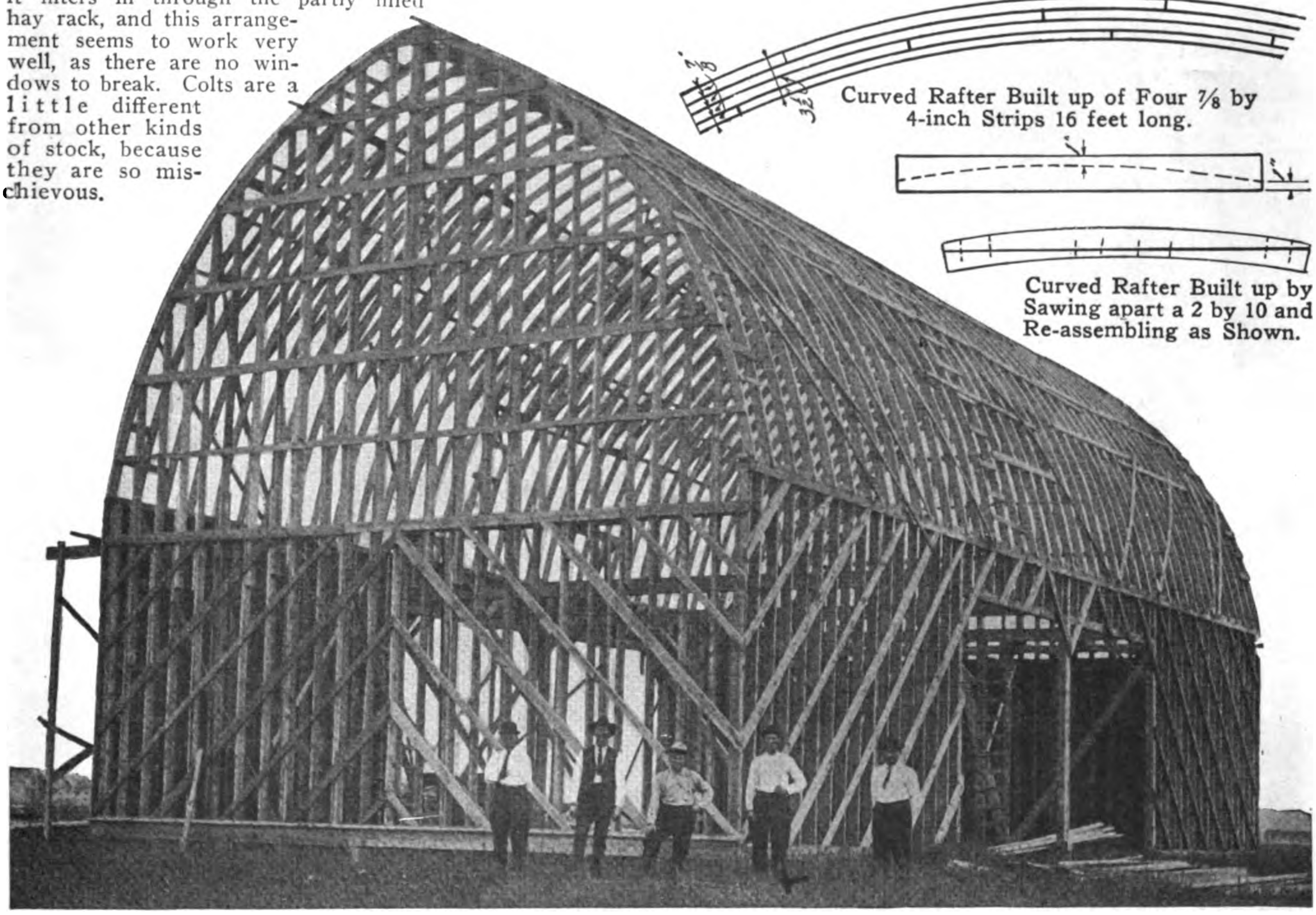
A COLT FEEDING SHED

A serviceable building 34 by 15 feet to house young stock. Hay is pitched in from the outside to the feeding racks along the front. We can furnish complete set of blue-printed working plans and typewritten specifications for only $3.00 per set. When ordering, ask for Design No. A121L.

The hay rack extends the whole length of the shed, but the trough reaches only to the door from each end of the shed. There is a bar across this door, under the hay rack, to prevent the colts from getting out into the barnyard, but the bar may be lifted when the attendant wishes to enter through this door. The advantage of extending the hay rack is to prevent the colts from getting in between two racks to get hurt.

To keep the hay dry in the rack, the roof must extend from 4 to 6 feet beyond the front of the building. In mild weather, both doors are left open so the colts can run into the paddock or go into the shed at any time of the day or night.

Colts should not run in the barnyard with other stock, they run too fast.

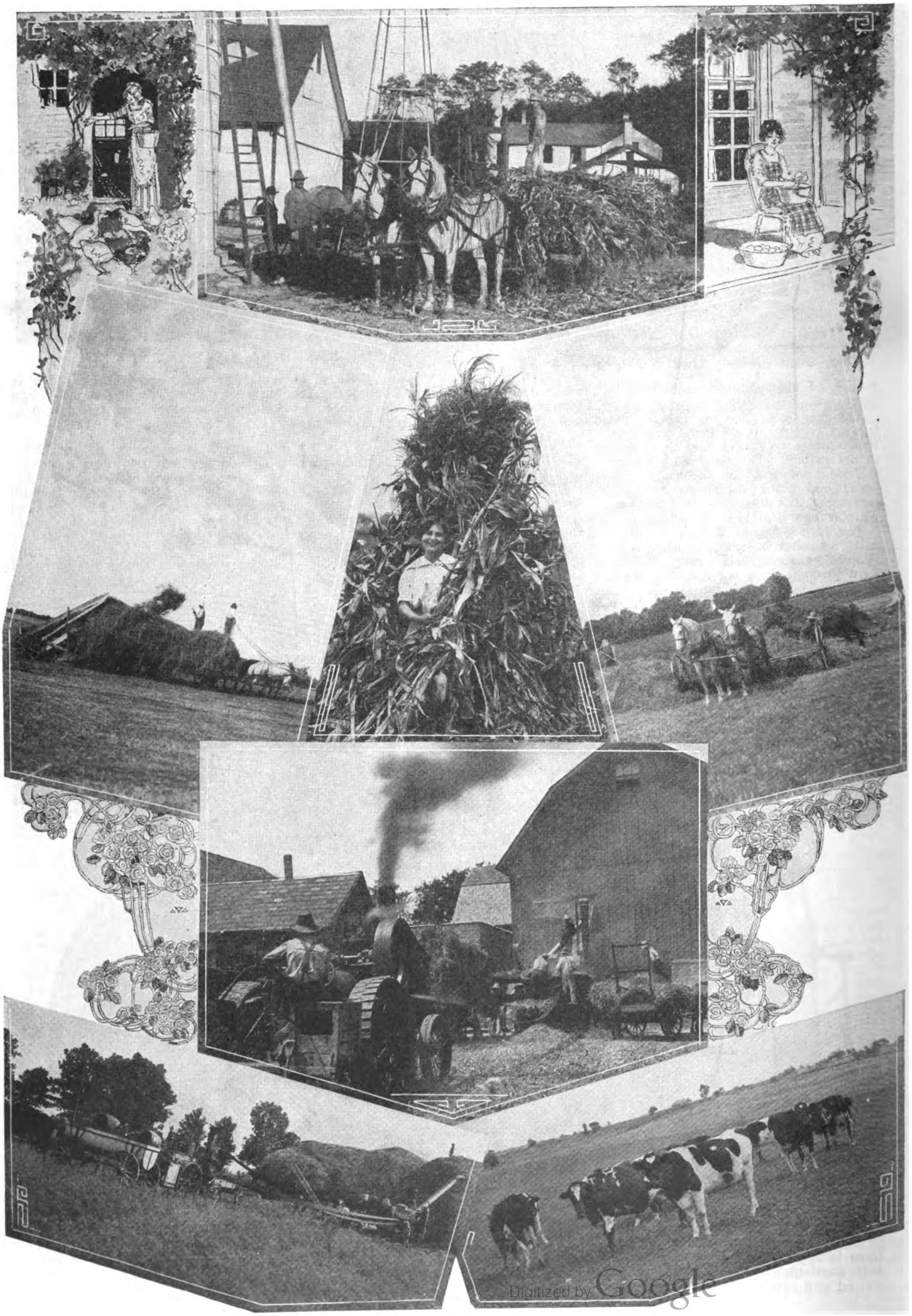


Curved Rafter Built up of Four 7/8 by 4-inch Strips 16 feet long.

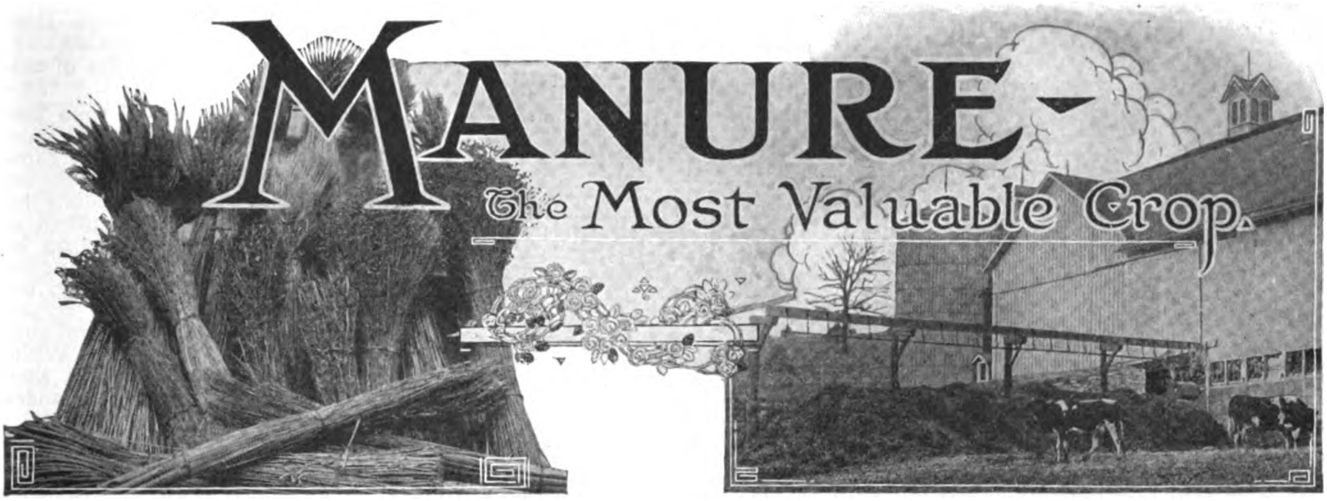
Curved Rafter Built up by Sawing apart a 2 by 10 and Re-assembling as Shown.

GOTHIC ROOF FRAMING FOR BEAUTY AND STRENGTH

A Gothic or curved roof makes a unique and at the same time a practical type of roof. It can be used instead of the ordinary gambrel in the construction of almost any barn design, if the farmer wants something distinctive. This barn is 36 feet wide by 80 feet in length, built of plank frame construction from the sill to the peak. The builder calls particular attention to the diagonal bracing, which makes a very rigid frame. The diagonal braces are firmly bolted and spiked on the outside.



SOME INTERESTING FARM ACTIVITIES



Stable Manure—Its Value and Easy Handling

A good share of the profit from dairy or beef farming is in the manure. In selling butter and feeding the warm skim milk, very little soil fertility leaves the farm. No other kind of farming will approach the value of dairying in this respect; and fattening beef cattle in the stable runs a close second.

In computing dairy profits, the manure value is seldom taken into account, because it is set off against labor. In a lump sum manner, the manure is supposed to be worth about as much as the labor of taking care of the cow.

In trying to arrive at the money value of cattle manure, a series of experiments were conducted at Cornell University. The conclusion arrived at gave $30 per cow as a fair valuation for the manure made by an animal weighing 1,000 pounds, when fed a liberal milk ration in a good dairy stable, where both the solids and liquids could be saved. We all know that keeping up the richness of the soil is the greatest problem that farmers have to deal with. If a cow will help a farmer in this respect to the extent of $30 a year, then the value of dairying should appeal to farmers in a new light.

To save this $30, the stable floor must be made of concrete and manure absorbents must be used. The cattle must be supplied liberally with bedding, which should consist of straw. If the straw is run through the cutting box, it makes a better bedding and absorbs a great deal more moisture than long straw. The next best absorbents for liquid manure are ground phosphate rock and gypsum. Gypsum is sulphate of lime, and phosphate rock carries phosphoric acid, both of which, under usual conditions, are very beneficial to the soil. They are both known as ammonia fixers, as they absorb ammonia from manure and hold it until they are applied to the soil.

There is a great deal of ammonia in lisuid manure, very much more than in the solids. Ammonia is a strong nitrogen compound. It is extremely volatile, so unless it is combined with some chemical of an affinitive nature, it floats away in the atmosphere and is lost to that particular farm.

By the proper and careful use of cut straw for bedding, together with liquid manure absorbents, the manure is collected and temporarily preserved, but it must be applied to the land almost immediately, or heavy losses will soon occur.

While the cow, if properly fed, will supply $30 worth of manure, it is up to the farmer to utilize this valuable by-product to the best advantage in order to secure the benefits. The best way that has ever been devised to use stable manure is to have a growing croy ready to make use of it and to make the application daily with a good manure spreader on land that is thorough well fitted to receive it.

Economically, this is again the best method. It costs money every time manure is handled over. The quicker it is loaded on the spreader and distributed where it is needed, the less expense is incurred.

With a properly arranged manure carrier suspended near the gutter, it costs nothing to load the manure into the spreader, and it costs very little to unload it. There are, however, certain difficulties and limitations that no farmer can control. Climatic conditions in the winter time are such as to render this kind of disposal almost impossible for days together — until a pile of manure accumulates which requires some nerve force to set to and clean up when the weather changes. There are weather periods when the ground is too soft for a load, and it is difficult to have a field well prepared to receive manure at all times. It is possible to forestall such difficulties in a great measure by starting operations on the land during the summer and fall, so as to be ready for emergencies.

Some dairymen practice sowing winter rye in the fall for hog pasture during the winter and spring. As the crop is to be plowed under, they are not particular if they do cut ruts in it with the manure spreader when the ground is soft. Rye is the coolest growing plant that possesses agricultural value. During some winters, even in the North, it will grow late in the fall, early in the spring, and there are even times between when the weather is warm enough to start rye growing.

Growing plants prepare the ground for the absorption of moisture and manure. This is one reason why the rye crop is valuable to dairy farmers. On general principles, soil fertility is preserved and utilized by such green growing crops. When, if the ground is bare, the nitrogen escapes into the atmosphere, while other elements of soil fertility are washed away by winter rains and melting snows. A good crop of wheat or rye holds the moisture, which soaks into the soil and carries manure with it.

Whenever possible, Dump the Stable Manure Direct Into the Spreader or Wagon and Get It Onto the Land—Saves Labor and Fertilizer Value.

When Impossible to Haul Out at Once, Stack the Manure—But Draw Out at Very First Opportunity

There is something about the bacteria in fresh manure that benefits the soil in a way that is not understood. This conclusion is corroborated by our experience in using manure spreaders. Less manure put on evenly is more beneficial than a larger quantity spread by hand. The theory is that a small particle of manure carries different kinds of bacteria that are beneficial to the soil. Even distribution will scatter these different forms of bacteria and distribute them to every square inch of soil surface. Growing plants protect these minute forms of life and encourage their multiplication in the soil, and the bacteria break down the particles of manure for soil enrichment.

Manure left in piles will soon lose half its strength. The old-fashioned idea of piling manure to rot it came from the experiments of greenhouse gardeners who wanted immediate results. These men usually worked in large towns or on the outskirts of cities, and their doings got into newspapers and books on gardening, because their work was easy of access. The early writers on agricultural topics usually were not farmers. While they were honest in their efforts, they were easily misled by appearances that were showy and impracticable.

Manure pits have always been a delusion. Very few farmers pile manure nowadays, and it is noticeable that manure pits are very scarce, and the few that are in use are much shallower. In fact, the new ones are nothing but depressions to collect liquid manure from stable drains. When the value of stable absorbents and their proper use is well understood, we will lose the manure pit entirely, and the expression "well-rotted manure" will disappear from agricultural literature.

Dairy Barn of Twenty Cows —Design A250L

A very neat dairy barn, compact and convenient, is shown in this design. It is built with silo, feed room, feed carriers and litter carriers, with a box pen for calves or any other purpose; and the whole plan is symmetrical and artistic.

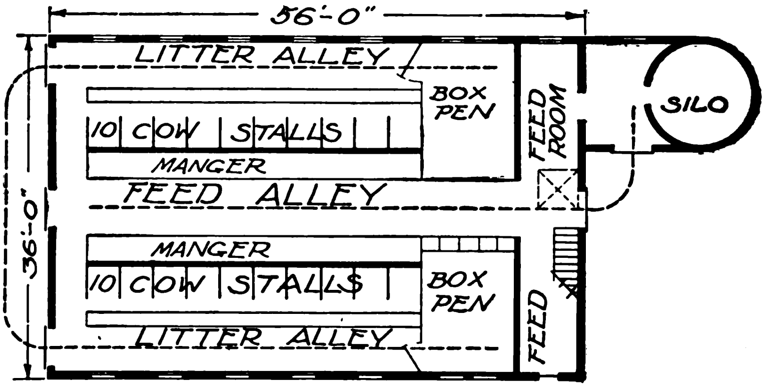
The cows in this stable are made to face in, so the feeding is done from the center alley, the plan that suits most dairy men. A silo is placed just outside of the barn at one corner, which leaves free access to the feeding alley through the end door of the stable. When the silage is dumped down from the doors, it is close to the feed room where concentrated feeds are stored, so the same track and carrier answer for both.

In this plan, the carrier track reaches outside of the stable at both ends—the feed carrier to reach the silo and the manure carriers to reach the manure spreader.

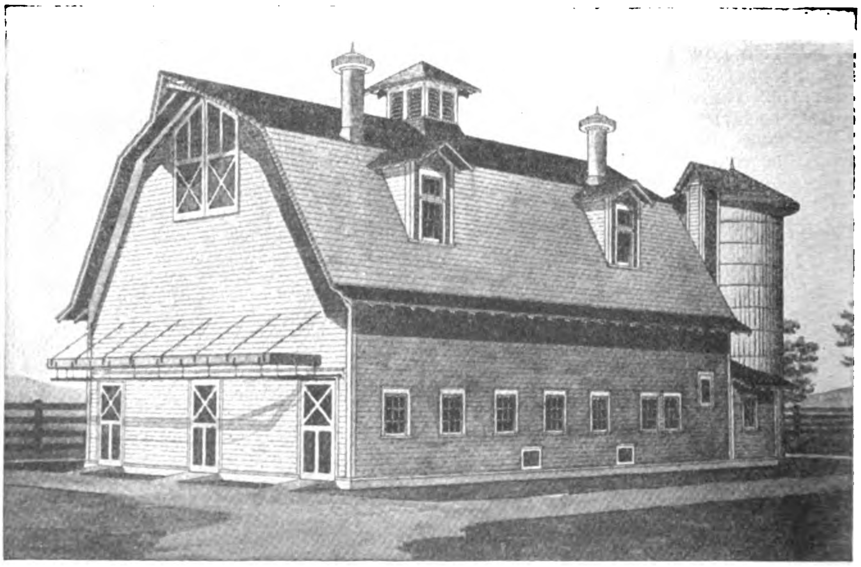
There is a thorough system of ventilation in this stable that regulates the air very nicely. When it is filled with cows and properly cared for, there is no objectionable odor, even in the morning, when the stable has been shut up all night.

One object in placing the silo over to one side is to permit the building of another silo at the same end of the building and still leave a passage way through. Generally when a farmer has one silo, his live stock increases until another silo is necessary to carry them over the winter. Farmers who keep as many as twenty cows like to have a little silage to feed in the summer.

The feeding of silage is so satisfactory that dairy men wonder how they ever managed without it. It is on a parallel with other kinds of business. You cannot do business this year with last year's methods. Progress is demanded in every line.



Plan of Barn for Twenty Cows, Design No. A250L



MODERN BARN FOR TWENTY COWS

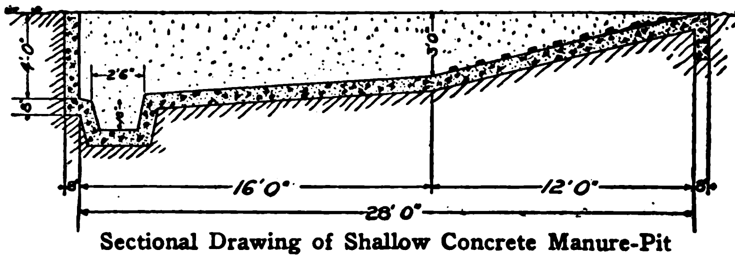
A 56 by 36-foot gambrel-roof barn with silo. Overhead trolley carriers run from silo through feed alley and make the circuit back of the cow stalls. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design A250L.

Smothering Manure

Judgment is necessary in plowing under manure so as to leave it exposed to the atmosphere. Manure turned into the bottom of a deep furrow in a close grained soil is worse than no manure, because it cannot be worked upon by decomposing bacteria, for these little aerobic friends of the farmer need air. Besides this, it cuts off the supply of moisture from below, because, if there is much trash and manure, the furrow slice is prevented from uniting with the subsoil.

When applying manure, the consistency of the soil must be taken into consideration. If soils are close-grained, the plow should be so set as to leave the furrow slice on edge, so that the trash will be left in position to lead the air down into the soil. Then, as the manure becomes moist, bacteria will work it fine and reduce it to humus consistency.

On the other hand, when treating sandy soil, a person may be a little careless in regard to the manner of covering manure, as long as he does not put it down too deep. For general cropping, all kinds of manure and fertilizers produce better results when incorporated into the top soil.



Sectional Drawing of Shallow Concrete Manure-Pit

For most farm crops a light, even dressing of manure applied with a spreader and carefully worked into the top soil some weeks before seeding will produce the best results with the least labor.

Winter Handling of Manure

When manure is hauled onto the land in winter and left in small piles in the field, it undergoes a great change. The rains take out much of the plant food and some of the bacteria. This part of the manure sinks into the soil under and around the little manure heap. Phosphorus is not easily washed out, because it is not soluble in rain water, so that when the straw is scattered, the different elements in manure are unevenly distributed.

To understand what this really means, it is necessary to analyze the effect on the growing crop. Nitrogen is a driver. It furnishes the energy, it produces growth. But without phosphorous there will be but a light yield of grain. Phosphorus supplies the protein. Land supplied with phosphorus but insufficient in nitrogen cannot produce large heads, because there is not material enough to make the straw. Potash stiffens the straw and adds flavor to the grain.

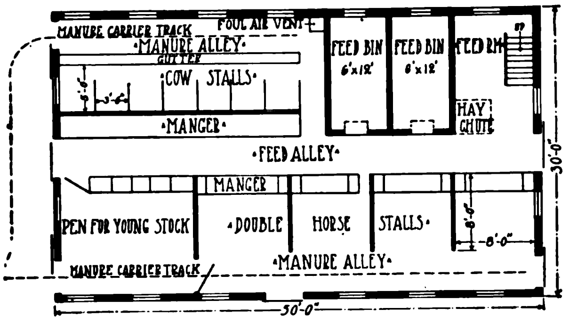
Young Stock, Horse and Cow Barn—Design A266L

Farm barns answer the purpose best when they are specially designed for the kind of stock that is to be stabled.

In design A266L, provision is made for young stock, for cows, and for horses. There also is a good feed room with a hay chute overhead for convenience in feeding.

These horse stalls are 8 feet wide and 8 feet deep, measuring from the front of the manger to the back of the partition. As horse stalls have no gutter behind them, or other means of determining where they leave off, it is difficult to give an exact measurement, but the stall partition is supposed to be 8 feet long and the stalls are 8 feet wide in the clear.

One manger is short enough to permit the attendant to crowd through to the feed alley, but this space is too small for a horse to go through.



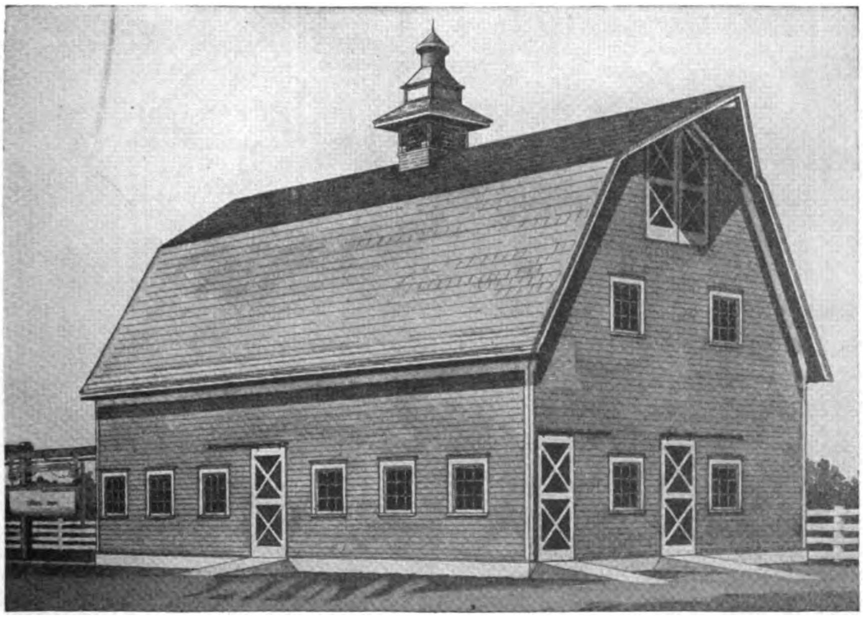
Floor Plan of Barn No. A266L

The young stock are partitioned off from the horse department by a partition that runs to the ceiling. There are doors to shut off the different alley ways, so the stock is not likely to get mixed in the stable. The horse and cow departments are as separate as they can be in a building of this size.

Ventilation is secured by the cupola that extends through the peak of the roof in the center. A cupola built in this way may act as a double ventilator. The round pipe that projects out through the top may be started below the stable ceiling to carry the foul air up through the hay mow and out at the highest point, while the square wooden part of the cupola acts as a ventilator for the hay mow. A cupola like this looks well on the top of a farm building.

There is a great deal in the way a building is designed and constructed to show up right in the completed building. As a finish it should be nicely painted in colors that blend properly together. A well proportioned farm building in both design and color is a pleasing object.

The roof on this barn is of the gambrel type without a curl at the eaves. This construction looks well on some barns because the general design seems to call for it. However, the finish of the roof at the eaves is more a matter of choice than necessity. There are many ways of doing the same kind of work.



VERY CONVENIENT FARM BARN OF MODERATE SIZE

A businesslike gambrel-roof design to stable 7 cows, 4 teams of horses and pens for young stock, besides 2 large feed bins. Overhead litter carrier runs through both stables. Size on ground, 50 by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design A266L.

Iron helps to put the green color in the leaf, which renders the manufacture of starch possible.

So far as experiments show, if manure is put on with a spreader it may be exposed to the atmosphere and the elements for weeks without serious injury. In fact, for certain crops it is improved by lying exposed, because it undergoes a change that causes it to act quicker. Every farmer has had experiences in manuring land for grain crops with the resulting crop very poor. The reason may be that the manure was not in condition to be assimilated by the soil and, while undergoing the change, the growing season passed. On heavy soils, manure has a loosening effect which in most instances is beneficial, but as a crop feeder, fresh manure should be in soil weeks before seed is planted.

Stables Are the Farm Fertilizer Factory

The barnyard, stock corrals and stables are the different departments of the farmer's fertilizer factory. If well managed, the output from this factory should be worth $5 a ton. Farm manure is, or should be, one of the most valuable by-products.

It requires some skill to apply a

Thirty by Sixty Cow Barn Design A269L

Small barns grow into larger ones. When a farmer starts in the dairy business, he is not always sure whether he will like it or not, but he soon discovers that it pays, then he likes the business.

A farmer is lucky who starts a real dairy business in a carefully designed and well constructed dairy barn, whether it be little or big. A good dairy stable is just as necessary to dairy farmers as a store is to a merchant.

This design, A269L, is only 60 by 30 feet in size, but it embodies all the essential features of a good dairy stable without any of the fancy frills that run into unnecessary expenses.

In the dairy stable end of the building, there are a pair of foul air ventilating flues to carry off the stable air from the alley ways behind the stalls. The stock shed end of the barn is supposed to ventilate through the big door and the windows.

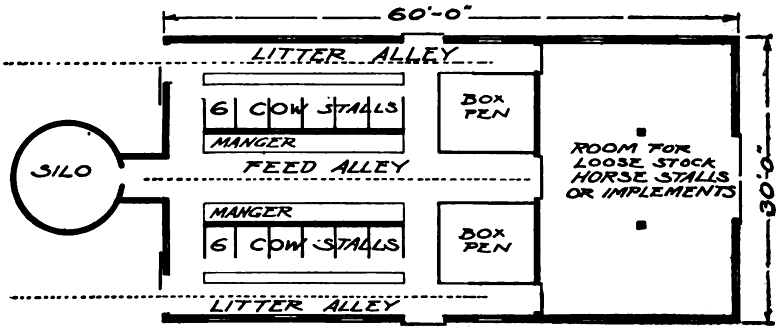
This stock enclosure was designed to suit farmers who raise a few head of pure bred cattle each year and want a safe, comfortable place to keep them in winter.

One silo is sufficient for a barn of this size. In the plans provision is made for an overhead track to extend from the silo through the feed alley to the cattle shed for the purpose of carrying silage or other litter as required. Other overhead tracks are intended for manure carriers, and these may run through into the cattle shed in the same way.

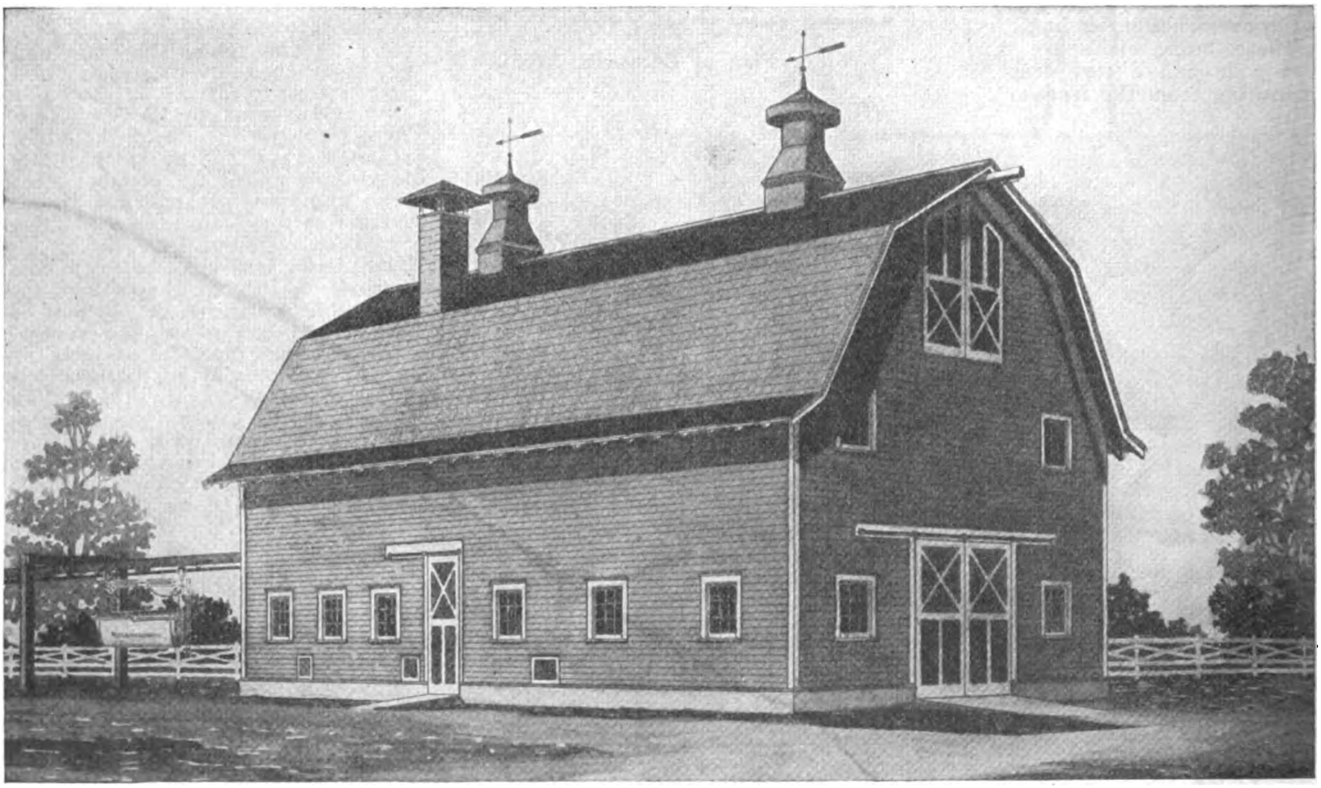
Each dairy man will arrange this part of the business to suit his own plans, and according to the manner in which he takes care of shed manure.

There is only one way to handle cow stable manure, and that is to get it entirely away from the premises as quickly as possible. In a stable of this kind, it would be much better to remove the shed manure at the same time because this shed is intimately connected with the cow stable and the odor from a carelessly kept cattle shed would be objectionable.

Dairy men cannot be too particular. The nature of the business demands the strictest cleanliness.



Floor Plan of Barn No. A269L



SIXTY-FOOT GENERAL FARM BARN

Well planned building containing twelve cow stalls and two box pens, besides large general room. Big storage is provided. Size of building 60 by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. When ordering, ask for Design No. A269L.

ton of barnyard fertilizer in such a way as to make that ton produce $5 worth of farm produce more than the land would have produced without that extra ton. But it is part of the plan whereby the different departments of the farm dovetail together to produce large yields and to maintain the richness of the soil.

Every farmer is keen for large yields and every good farmer is just as keen to leave the ground in better condition because of having grown the crop.

Selling Farm Fertility

Under normal conditions, nature designed that soil should grow trees and grass. Under normal conditions everything produced from the soil goes directly back into the soil.

Under artificial conditions, worked out by man, the soil is worked under pressure. It is cultivated and stimulated in many ways to produce the greatest possible yields of valuable farm produce. Then the crops are sold and a portion of the soil fertility is thrown in for good measure.

In selling a ton of hay, the farmer throws in about $5 worth of soil fertility; that is, he would have to pay $5 for artificial fertilizer enough to put back into the soil the amount of fertility that was carried away in the ton of hay. When the hay is clover, the amount is a good deal more. A load of corn, oats or barley carries away considerable fertility, while live cattle walk away with the amount of phosphorus they have stored away in their bones and the nitrogen that is in their muscles. In selling wheat at 80 cents a bushel, we should deduct at least 10 cents a bushel for fertilizer in figuring profits, because it will cost that much to replace it.

Abusing the Soil

About a hundred millions of people in the United States are depending on the maintenance of the fertility of American soil for a living. According to our present rate of increase, the population of the United States will reach 200,000,00 about the year 1950. With this prospect ahead, competition for mere existence will be very keen unless we adopt more strenuous methods of maintaining soil fertility.

We are robbing the coal mines of their stores, leaving them empty and valueless. We are chopping down the forests without making adequate provision for second growth. We are exhausting the iron and copper and

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Ell Shaped Stock Barn—Design A263L

A large cow barn and a good sized horse barn are built together in design A263L in the shape of the letter "L."

This plan devotes the main wing of the barn, 40 by 60 feet, entirely to dairy cows. The other wing, which might be termed the base of the "L," is planned for horses, for the most part in single stalls. A couple of box stalls are provided for special use. From the feed room, a stairway leads up to the hay floor. A pen that may be used in connection with the cow stable occupies the corner.

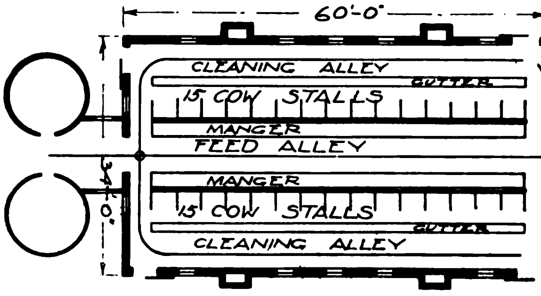
A very desirable feature of the horse stable is the watering tank in the central alley that connects with and runs through the cow stable. This watering trough is intended for use of the horses, but on stormy days, it comes in handy for some of the cows, if not all of them.

This plan provides for the housing of thirty cows and sixteen horses in the single stalls, so that considerable live stock can be housed under one roof. There is a comfortable feeling in stormy weather in winter about doing the chores in a self-contained barn.

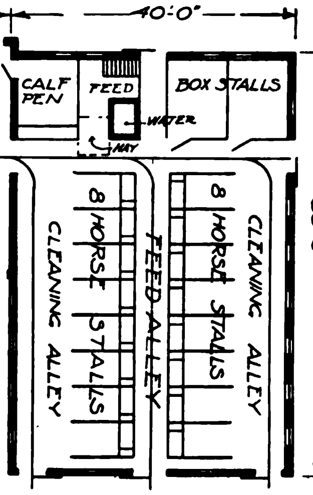
With the two silos and such storage capacity as this roof provides, the feeding proposition is easy. There is a great difference in taking care of animals when you have the facilities for doing it. It seems to relieve a stock man of the principle burden. He really has nothing to worry about. He can devote his whole time to the improvement of his live stock, which, of course, means laying out work for summer as well as taking care of their present needs.

The ventilating flues in this cow stable are a little different from the ordinary, because they are built outside of the stable. This is done for the purpose of leaving the stable walls straight and smooth on the inside. Above the stable ceiling they are carried into the building, where they do not interfere with the internal working of the barn.

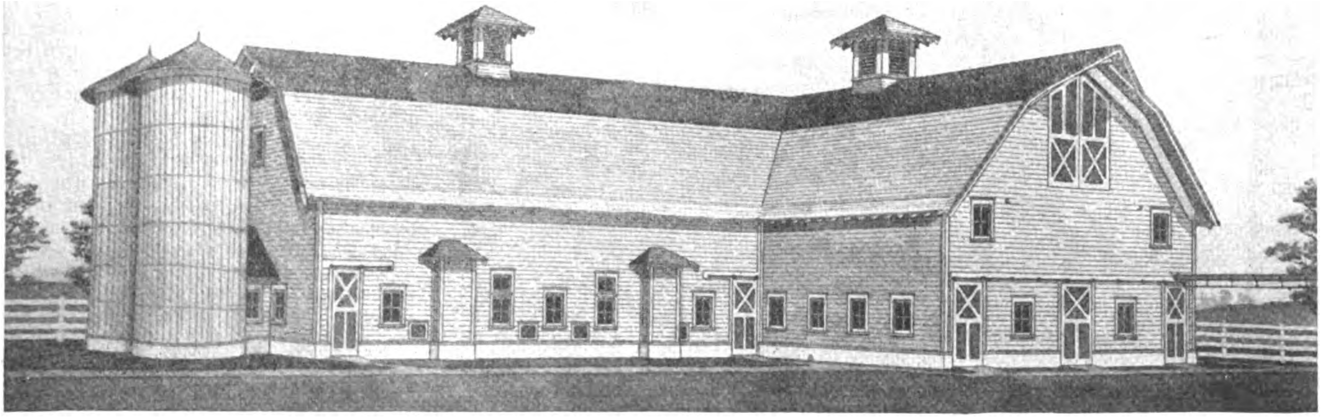
In most of the large improved barns, provision is made for overhead tracks to carry feed and litter cars. Men having a good sized dairy and plenty of horses will appreciate this design.



Silos and Stable for Thirty Cows.



Barn for Sixteen Horses



LARGE RIGHT-ANGLE BARN WITH TWO SILOS

Combination barn for 30 cows and 16 horses. Dimensions of cow part 60 by 34 feet and of horse part 40 by 60 feet. Overhead carriers serve all parts of the stable floor. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. When ordering, ask for Design No. A263L.

zinc and gold and silver mines of their most valuable minerals, but what is worse than all, we are steadily reducing the productive capacity of the soil.

When the mines are exhausted, the supply is done, but soil, under proper treatment, is capable of renewal. Fortunately, the elements necessary to produce plant growth for the most part are locked up in the soil in such a way that nature must be reckoned with before they can be liberated. Under intelligent management this may be done as we go along, by farming in a conservation way—by conserving and adding to the soil as we draw upon its present vitality.

As soon as the great mass of Amercan farmers realize how to make deposits as well as to draw drafts, the soil bank account will grow in value instead of diminishing.

The way some of our farm land has been ruined through bad management is criminal. The idea seems to have been to take as much as possible from the soil and put nothing back. Up to within a few years, this has been almost a national policy. As a result, there are thousands of farms that will not produce enough to pay for the cropping.

There are farms where the stable and barnyard manure is considered a nuisance. There are still farmers who burn their straw piles after threshing. Such men are the ones to howl about hard times, and they blame it on providence or the government, or anything but themselves.

Soil Fertility

Change means progress. Not all changes are improvements, except that every change adds to the sum of human knowledge. The study of soil fertility in a practical way is comparatively new.

Ideas have changed considerably of late in regard to the manner in which plants grow. In the first place, we have abandoned the idea that soil is dissolved rock. Soil is now considered as disintegrated rock, that each soil particle really is a small rock maintaining the same characterstics that the parent rock contained. This leads to the theory that there is no real change in the soil itself; that the film of soil moisture may continue to collect plant-growing properties from each soil particle, but so long as any core remains, the grain of soil maintains its original characteristics.

Followng this theory, it would seem that all soils are just as rich as they were in the beginning. Such being the case, we have to look to other reasons for the lowering of farm yields. For instance, we must know why the yield of wheat has dropped from forty bushels to fourteen bushels. Also, we must know why the application of the so-called commercial fertilizers will very frequently increase the yield greatly.

After studying the subject of soil fertility, we are obliged to admit that we are not very far along in the real science of crop production. The difference between the actual fertility contained in the soil and the possible results from actual cropping is accounted for in a general way, on the basis of availability. The soil may be just as rich as it ever was, but that does not alter the fact that it is almost impossible to harvest profitable yields from land that has been worked a generation or two.

In order to live and grow, plants must be supplied with moisture to drink, air to breathe, about a dozen different plant foods, and we are now learning that plants, like domestic animals, must live under healthful, sanitary conditions.

When animals are shut up in a close stable without proper ventilation, they poison each other with the waste matter discarded from their lungs and bodies.

To Relieve Soil Fatigue

When plants are crowded together in the soil for the purpose of forcing the greatest possible yield per acre, it is believed that plants discard an effluviam that is objectionable to their own species. We think this is one of the main reasons why rotation of crops has proved so beneficial. The habits of the plants following being different, they are enabled to fit into their new environment as a proper rotation that is beneficial to the plants and rejuvenating to the soil.

We used to think that water moved in the soil to replace that portion extracted by plant roots, so as to maintain a constant supply.

We now think the plant searches out the soil water, because roots take in water at the tip ends only.

Tomorrow it feeds on the fresh soil water beyond.

This provision seems to have been designed by nature to prevent the roots from reabsorbing the effluvia given off in the process of growth.

Barn for Twenty Cows —Design A271L

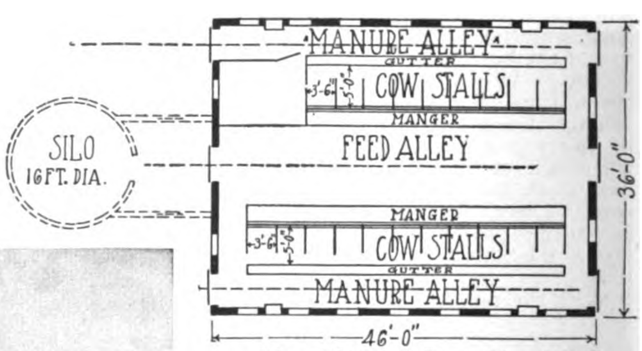
A cow barn that is neat in appearance and a little odd in shape is given in this design.

Cow stables have grown in width in the last ten years. Some old stables are as narrow as 28 feet, but dairy men are becoming more liberal in regard to space. One reason is that light, better circulation of air, better ventilating devices, cement floors and feeding alleys wide enough to accommodate a feed carrier, have had a direct influence in creating wider stables.

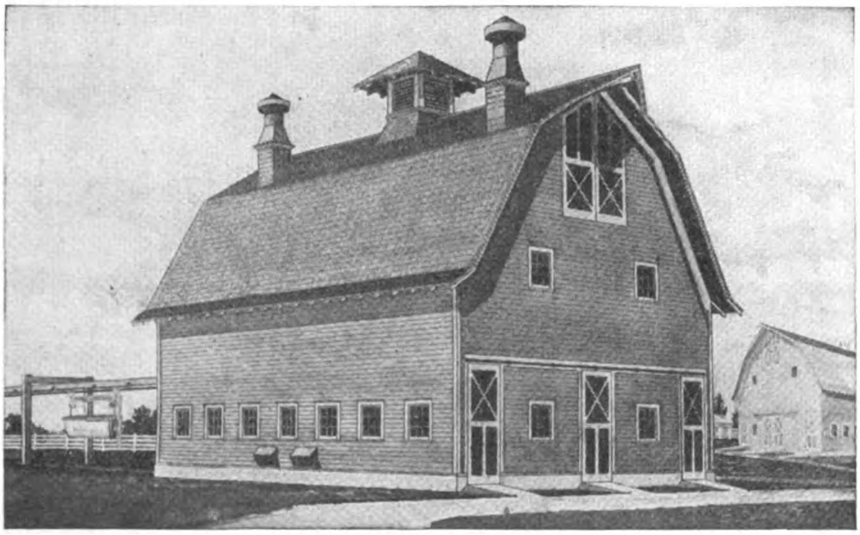
Before building, it is a good plan to investigate all the new wrinkles. It may be that a feed carrier is not considered essential at present, but if the necessary width is provided, the carrier may be put in later.

The use of silage has brought about a good many changes in feeding dairy cows. The high price of butter and cream leaves sufficient profit so a dairy man can afford a good stable, and progressive farmers are demanding the best there is to be had.

The newer stables are built with lots of doors and windows. Room enough is provided for all the conveniences to lighten labor. Of course, sanitation is one of the main features that is always in the mind of the good dairy man.



Floor Plan of Barn No. A271L



HANDY BARN FOR TWENTY COWS

Modern well-ventilated gambrel roof cow barn built tall to hold a good supply of roughage. Size, 46 by 36 feet. Silo indicated on plan to be built later. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A271L.

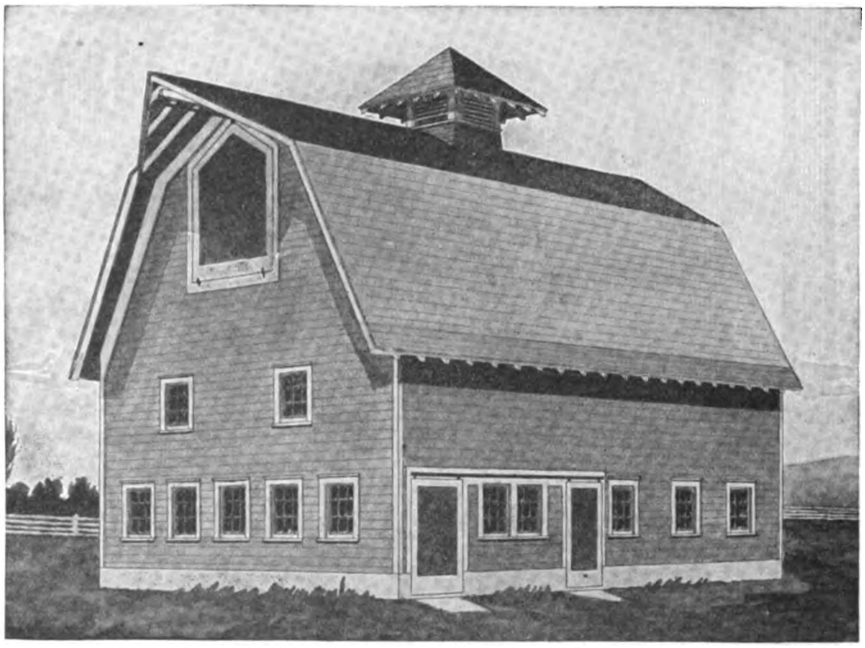
Manure a Complete Fertilizer

It is not generally well known that plants require iron. Iron has been found in plants, but the necessity of having it there was questioned. It is now understood that iron enables plants to produce the green leaf color in the leaf cells. It is in these green cells that chlorophyl acts in connection with the direct rays of the sun to store up carbon collected from the atmosphere. In the manufacture of starch, the plant must have a supply of potash, and to make protein, phosphorus is necessary. This accounts for clover requiring such heavy amounts of phosphorus.

In order to produce a maximum growth and yield of seed, plants must be supplied with nitrogen, potash, phosphoric acid, carbon, iron, chlorine, sulphur, magnesia and lime. Ordinarily, soils contain all of these elements, but it is up to the farmer to know whether any are lacking or not, and he must know how to supply the deficiency in such a way as to benefit the soil instead of further exhausting it. The study of soil and the handling of manure so as to supply deficiencies, requires more than ordinary intelligence.

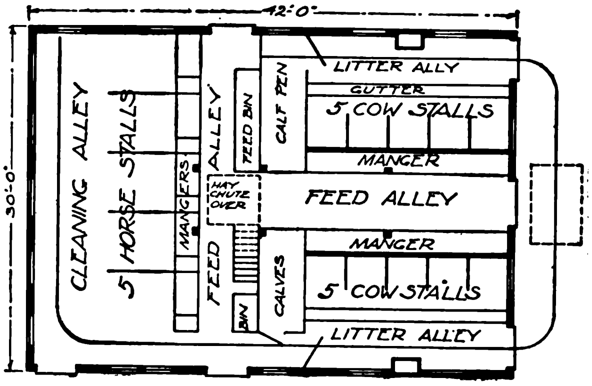
The best physicians are those who know how to diagnose diseases. Successful physicians commence with symptoms in connection with the case, then form their deductions. Farmers must do the same thing. When a field does not produce maximum crops, the symptoms must be collected, segregated and analyzed. It may be that the soil is deficient in one element only. It seems too bad that farmers must lose the profitable end of a crop because they fail to provide one necessary element for the proper maturing of that particular crop, but such often is the case. Soil may contain all the elements that go to make up plant life, save one. The lack of that one element will lead to failure or partial failure of the crop. This is probably why fertilizer manufacturers like to sell what they are pleased to term "complete fertilizer." They mean by this term that the fertilizer contains the different principal elements of plant food sufficient to insure success. Some of them may not be needed, but it is a sort of shot gun diagnosis, so they fire the whole charge with the expectation that one or two shots will take effect.

One reason why barnyard manure is beneficial to the soil is because it contains all the necessary elements of plant growth. In addition, it contains large quantities of bacteria that follow the manure into the soil; also there is humus in barnyard manure, which all combine to make up general efficiency.



FORTY-TWO BY THIRTY-FOOT GENERAL BARN

A clever design to accommodate 5 horses and 10 cows on the ground floor and give large storage space above. Litter carrier around the barn makes doing the chores easy. Size of barn, 42 by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A267L.



Floor Plan of Barn No. A267L

Forty-two by Thirty Barn—Design A267L

This design was made for a rather new farm in Wisconsin. The owner wanted a good barn, but did not need a very large one. He wanted to build with as little expense as possible, but with the idea of getting good results and the worth of his money. He expected to keep eight or ten cows and some young stock, and he wanted stabling for his five horses. Like a good many other farmers starting on new land, he had some temporary shed room that he hoped to pull down in the near future, but at the present he could use it for some of the surplus young stock.

This little barn, as it now stands, probably forms the nucleus of a good set of farm buildings that will be a credit to the neighborhood. The foundation floor is made of concrete in the most approved manner. There are plenty of windows for light in the stable, and they are arranged so as to give the necessary ventilation. The hay chute is nearly in the center of the building, and it is so arranged that it will operate as a ventilator to a certain extent. Also two ventilating flues are designed for the sides of the cow stable, and spaces left for them to be put in later. The question of ventilating a stable for ten cows is not so serious as the providing of stable ventilation for twenty or thirty cows. At the same time, a few cows should receive first-class care, otherwise they cannot make dividends for the owner.

This farmer is fully alive to the situation. He is progressive in every way possible, but, as he says, the dollars are hard to get hold of in a new country while a fellow is trying to get established and to provide for a large family of small boys and girls.

Use of Cement on the Farm

The use of Portland cement is increasing very rapidly. Where good, sharp sand or gravel is available, or if broken stone may be had at reasonable cost, farmers can easily mix the very best of concrete at comparatively small expense. A little experience will soon put a person right.

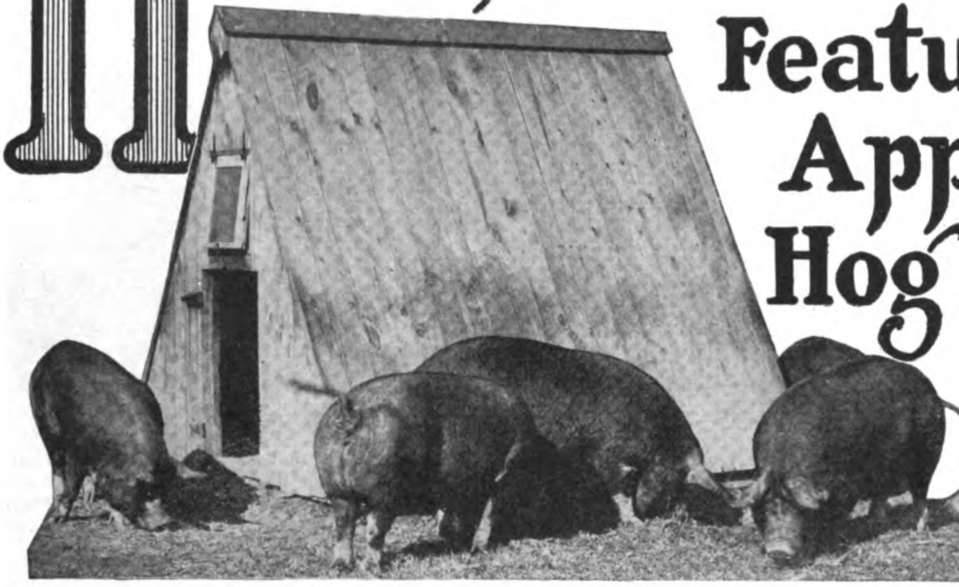
Instructions may be had from the cement makers and from government bulletins. Each man can experiment with the kind of cement, sand and gravel that he has at hand.

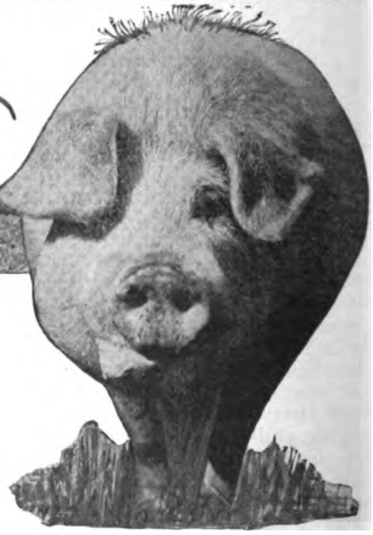
To test sand, put a handful or two in a pail of clear water, stir it well and notice if it makes the water muddy. Good concrete requires clean, sharp sand. Sand containing more than 10 per cent of mud makes a poor job. Sand may be washed, but it is slow, expensive work.

Put together different proportions of cement, sand and gravel and fill tin cans with the mortar. Within a week examine the concrete. These experiments will teach more than to read rules by the page. Your lumber dealer will tell you the kind of cement to use for your work.

HOGS for PROFIT

Featuring Approved Hog Houses



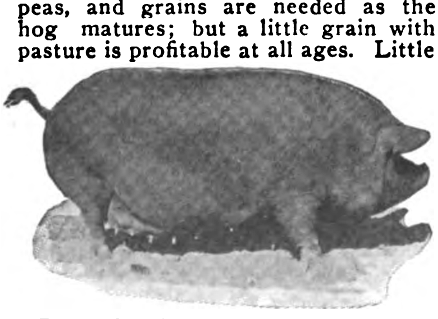


Hogs; Their Winter Housing and Summer Pasture

The hog is one of the diversity crops. It is natural for hogs to forage for their living in summer. It is unnatural for hogs to be shut up in a small pen, and it is expensive to carry feed to them. Hogs should be kept on pasture as early and as late as the season will permit.

There are a good many different kinds of forage crops for hogs. Some are almost universal, while other crops belong especially to certain climates and soil conditions, but the main thing is to grow something that will furnish green food in abundance, for hogs are gross feeders. Hogs will harvest their own crops and work for nothing. In fact, if they are rightly managed they will pay well for the privilege.

Young hogs require a great deal of protein. Fattening hogs need more carbohydrates. Clover, and other leguminous plan fits are especially valuable when the pigs are young. Corn, peas, and grains are needed as the hog matures; but a little grain with pasture is profitable at all ages. Little labor is required to look after hogs on pasture compared with feeding in a closed pen. Disease on pasture is rare and much easier to control.



Berkshire Sow, Owned at Lowell, Mass.

The best pork is made from pasture and a little grain each day, according to the requirements of the hogs. Pork made this way costs less, and is more satisfactory in every way.

Hog Cots

Any farmer who has undertaken to handle a lot of sows at farrowing time without facilities for keeping the litters separate has discovered difficulties. At the time of farrowing, a sow should be shut entirely away by herself. Afterward, when the pigs begin to assert their playfulness, they must be encouraged to take exercise to prevent a case of thumps. Every farmer likes to see the little fellows grow. At the same time, old breeders recognize the danger of overfeeding young pigs unless they get a great deal of exercise.

Sows differ as much as cows in their milking proclivities. One sow will raise eight or nine pigs, and furnish all the sustenance they require; while another will not have milk enough for half that many. This is where individual attention is required. To get the profit out of pigs, it is necessary to give them a good start in life when they are little. If they get the right sendoff, it is easy to follow it up with good feeding methods and make them gain a pound a day until they are eight months of age.

As an individual hog house proposition, nothing is quite so satisfactory as an "A" shaped house, built as shown above so it may be moved about. Such houses may be placed in a row in the early spring, with a panel of portable fence between. Later, as the pigs get older, these small cots may be hauled off into the hog pasture. These "A" shaped houses are simple affairs. The frames are made of 2 by 4, and for warmth the floor is made for two thicknesses of boards. The shape encourages ventilation, but there is not a great amount of air space overhead, so it is easily heated by the body warmth of the sow and pigs. Right here is where some breeders have difficulty. They build a hog house for farrowing that is so big and with the ceiling so high that the place is just as cold as outdoors.

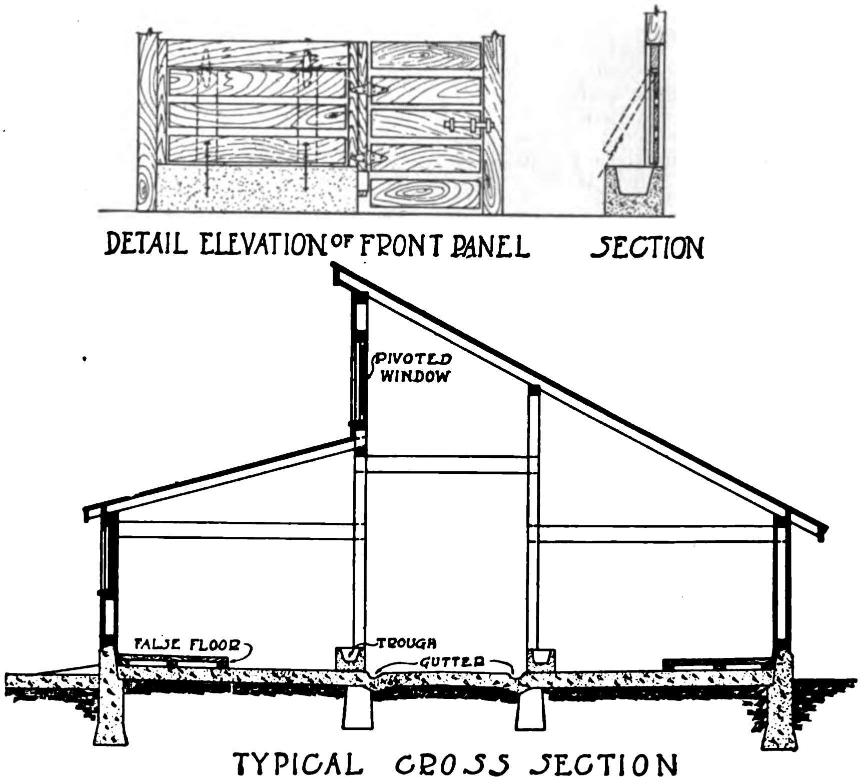
On the other hand, a little space like this will be warm and comfortable in very cold weather, but, on account of having so little air space, special attention must be given to ventilation. Little pigs need fresh air, and plenty of it, but they cannot stand a cold draft. Unless a building is properly constructed, it cannot be properly ventilated. There is a difference in right and wrong construction. Ventilation means frequent changing of air without dangerous drafts.

Winter Hog House—Design A239L

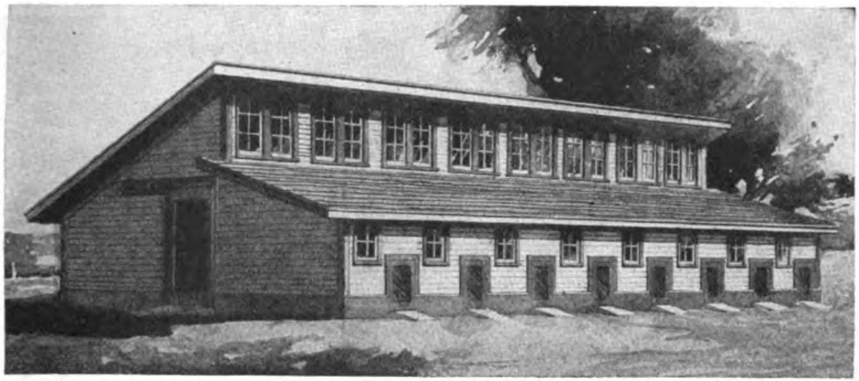
Fall pigs must be carried through the winter to get the money value out of them. A few pigs may be left to root around the straw stacks, but raising good hogs to make money requires careful planning to breed two litters a year at the right time to fit in with the seasons.

The breeding plan on most well-conducted stock farms divides the farrowing between April for spring pigs, and October for winter pigs. October farrowing gets young pigs along to the shoat age during the early part of the winter. Just when they should be growing their best is when the extremely cold weather is coming on and a good house is necessary to induce them to make proper gains.

With a house like this, any farmer can raise pure-bred stock and sell the best animals at high prices. Hogs for fattening should be made to weigh from 180 to 250 pounds when they are eight months old. This is generally the most profitable age and weight, and it is the age and weight wanted by the packers. This age and weight mean that each pig must gain one pound per day from birth to market time. This is a very profitable gain for hogs to make, and it is reasonable to expect such gains when well bred hogs are well fed and properly cared for in every way.



Details of Construction of Winter Hog House No. A239L



GOVERNMENT RECOMMENDED SAWTOOTH-ROOF HOG HOUSE

A winter hog house with windows set in along the sawtooth-roof so as to light and warm the furthest corners of the inside. Place this house to face the south. Dimensions of hog house, 48 by 24 feet. Contains sixteen 6 by 9-foot pens. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design No. A239L.

In this plan, it will be noticed that the pens are small. In practice, it has been found better not to nest more than five or six pigs together. They are better in small lots, even if the pens are made quite small.

When a house is narrow, and built with a double set of windows, it is easier to get the sun into every part of the house than it is when the house is wider. The length, of course, makes no difference in this respect.

The foundation of the building is concrete, and a concrete floor is spread over the whole surface. A concrete floor in a hog house is almost an absolute necessity, but it is too cold for hogs to sleep on. For this reason, the nests are placed on loose, wooden floors, that may be moved about for cleaning. These floors are about half the size of the pens. There should be a ridge around the edge of each floor to hold the bedding.

The upper windows are pivoted so any number of them may be pulled open for ventilation. With five shoats in each pen, the house will be warm enough to have some of the windows open most of the time. In fact, hogs need ventilation just as much as any other animal.

The detail drawings show the construction of the troughs and the swinging gate.

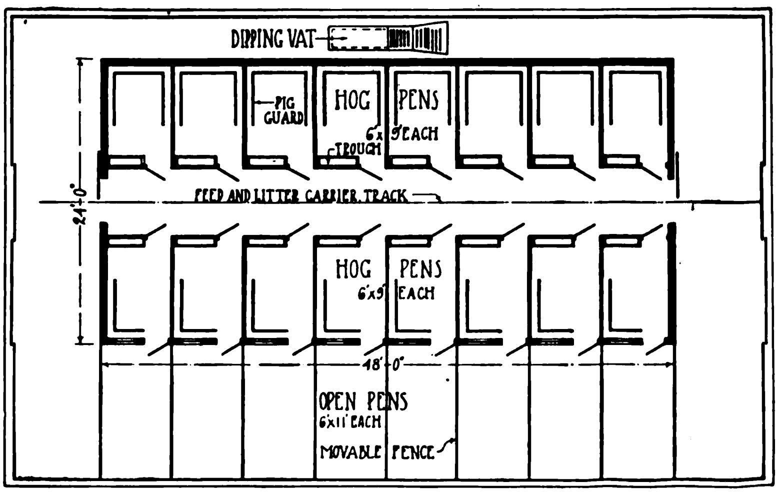
When this house is used for sows and their litters the pens will be about the right size.

Hogging Off Corn

Let the hogs harvest their share of the corn.

They do the work fairly well and they work cheaper than other farm help.

They may be a little mussy about their work sometimes, but they get



Ground Plan of Winter Hog House No. A239L, Together with Suggested Fencing and Open Pens to go with This Building. Note Dipping Vat for Hogs Placed in Runway at Back.

most of the corn, and the exercise is good for them. Besides eating the corn, they get away with the leaves and a good deal of the stalk.

They do their best work in this line when they are confined to one side of the corn field until they finish the job. A movable fence is necessary, but it pays.

Corn can be raised at an actual expense to a farmer of about $4.50 or $5.00 per acre. Adding the rent of land brings the cost up to somewhere between $7.50 and $9.00. Sowing rape in the corn costs very little extra, and it increases the forage while discouraging weed growth.

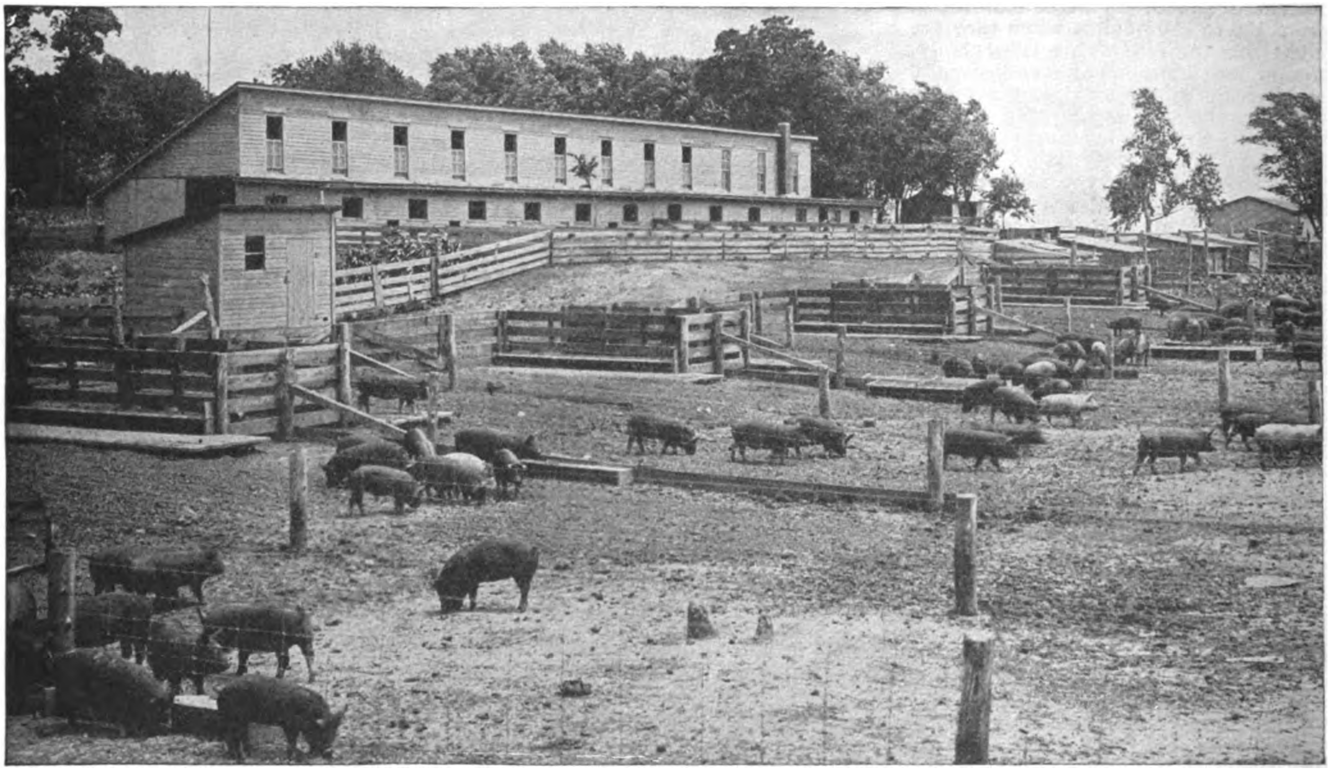
$9.00 for twenty or thirty tons of grain and roughage makes cheap hog feed. If the hogs waste a little in gathering the feed, the loss is not felt like paying out hard cash for help to harvest the corn and to distribute the corn in feed lots.

Hogs are much more thrifty when permitted to work out in the fields. They make weight cheaper and often at a more rapid rate than when kept up in feed lots; and the risk of disease is much less.

Hogging off corn is not a lazy man's proposition. It is more in the nature of a legitimate labor saving proposition. The plan that yields the largest profit for the least amount of labor is the plan that appeals to the best farmers in the country.

The cost of the extra hog wire for the portable fence, and the stretching of the wire costs less than husking the corn.

The preparation of the land for the crop to follow is easier on that part of the corn field that has been cared for by the hogs than where corn has been snapped and the stalks run through by cattle,



WHERE THEY MAKE A BUSINESS OF HOG RAISING

Business-like winter hog house and system of colony pens and runyards, which permit the farmer to keep accurate track of his several litters while fitting them for the market

The following crop yields better on the land that the hogs have worked over.

Hog Rubbing Post

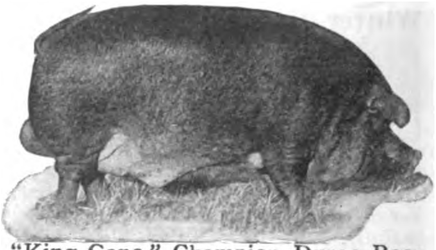
Each small hog yard should be provided with one or two rubbing posts. These posts should be wound about with burlap; old sacks answer the purpose very well. The burlap should be carefully and securely tacked on, but the tacks should be driven into the posts very firmly so they will not work out. The burlap reaches from the top of the post to within a few inches of the ground. Once or twice a week, coal oil is poured on top and permitted to soak down through. The hogs will rub the oil into the creases of the skin where the lice harbor.

The easy keeping of hogs depends very much on the simple contrivances provided for the comfort of the hogs. No hog can be comfortable when it is tormented with lice. By proper management, these chores will be attended to by the hog itself.

The profits depend very much on the cost,—everything that helps to eliminate labor, other things being equal, goes to swell the profit.

Spraying Hogs for Lice

When hogs are shut up for a long time in winter, some means of fighting lice must be a part of the system of caring for the hogs. The easiest way of treating the hogs in a small way is with a hand spray pump. It may be done while the hogs are feeding at the trough, without the necessity of climbing into the pen. The dividends depend largely upon keeping the hogs free from vermin.

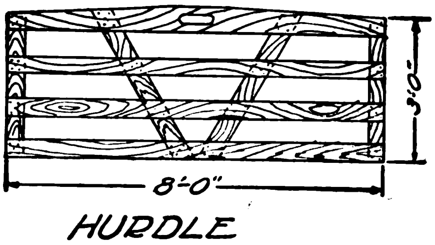


"King Gano," Champion Duroc Boar, Owned at Weston, Ia.

Hog and Sheep Hurdle

A great convenience for driving hogs or sheep, is a light hurdle that may be easily carried in one hand. A hog will walk along by the side of a moving hurdle, expecting to get past it. In fact, sheep and other domestic animals are built very much along the same line.

The hurdle is made about 2½ feet high and about 8 feet long. Light stuff is used, preferably hard wood. The upright pieces at the ends are double, but the center braces are on one side only. No nails are used to fasten it together, but there is a carriage bolt at each intersection. This requires sixteen bolts, six pieces of wood 3½ inches wide and 3 feet



A Useful Portable Gate for Use in Handling Hogs or Sheep

long; three pieces ¾ by 4 inches in width, 8 feet long, and one piece ¾ inch thick and 8 inches wide, to make an arched top with a hand hold in the center.

A cheap little contrivance of this kind will save hours of time in sorting out pigs for market or assorting certain sizes to be placed in the pens together. Each man working on a job of this kind should have a hurdle. Two hurdles and three men will take a hog any distance in any desired direction without any cuss words. It simply humors a hog in doing what he thinks he wants to do. He can see an opening in front of him, and walks along expecting to get out.

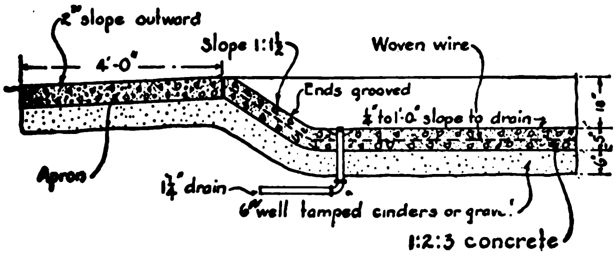
Hog Wallowing Vat

The easiest way to keep hogs free from lice is a wallowing vat, in which water is kept at a depth of from 8 inches to a foot. Coal oil is poured on top of the water at intervals as necessary.

A few hogs will need a fresh supply of water and oil once a week. A good many hogs will need it oftener. The hogs go into the wallow and roll around. The coal oil being lighter than water, floats on top, and gets into the hair of the hogs. Coal oil and lice do not agree very well, so that with a convenience of this kind, hogs will keep themselves practically free from vermin. It is a useful contrivance that is easily provided, and it is not expensive.

The most satisfactory tank is made of concrete. To make it watertight, a thin coat of cement should be troweled on the inside while the concrete is still fresh.

A simple vat built on this plan and taken care of, saves the building of a dipping vat and the necessity of stopping the farm work to put the hogs through.



Partial Section of Concrete Hog Wallow, Showing Rim Around Edge, and Part Detail of Basin Construction.

Hog Cholera or Hog Worm Remedy

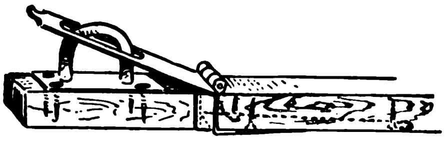
Hogs will keep themselves free from worms if permitted to run to a box containing sulphate of iron, salt, charcoal (or soft coal) and wood ashes mixed together in the following proportions:

Common salt 2½ pounds, Charcoal 25 pounds, Sulphate of iron 3 pounds, and a shovelful of dry wood ashes.

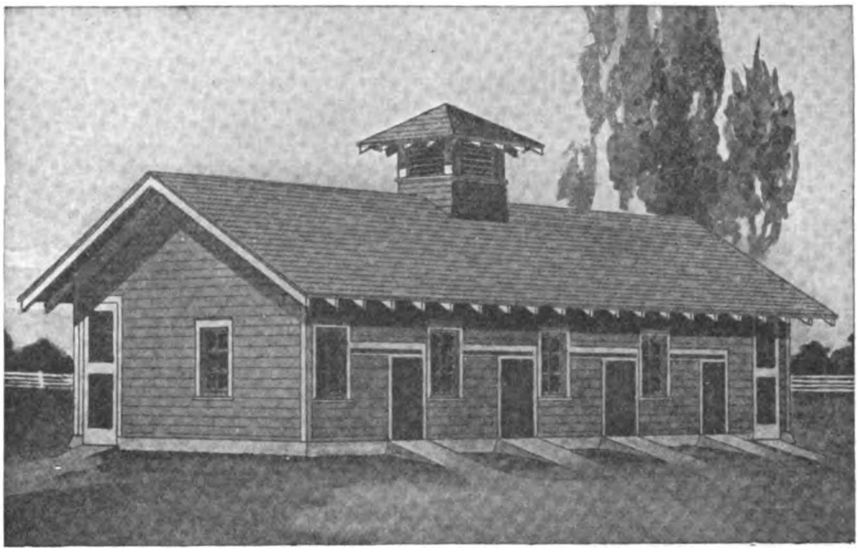
If soft coal is used instead of charcoal, double the quantity by weight, as charcoal is very light when weighed up against coal. Mix thoroughly and put it in covered boxes or boxes protected from the rain, and watch the hogs for a few days, to see how they take to it. Generally they will help themselves to quantities about right. However, if they eat it a little too readily, put in a little more sulphate of iron. This remedy, if kept where the hogs can run to it, acts as a preventive of hog cholera and other diseases that hogs are troubled with. It is a sure cure for worms, and worms are forerunners of other diseases. Wormy hogs are not profitable, as they cannot make good use of the food they consume. Worms weaken hogs so they are susceptible to any disease that comes along.

A Burglar Proof Hasp

A marauder armed with a busy little screwdriver laughs at the ordinary hinge hasp and padlock. He does not bother to try to pick the lock. He simply unscrews the hinge of the hasp and walks in. The illustration shows how this condition of affairs is remedied by simply giving the hinge a right angle bend the width of the board back from the joint. Then the screws in the staple fixture are covered over by the steel hasp; when the padlock is in place no screws are exposed to prowlers.



Back Leaf is Bent and Screwed from Inside



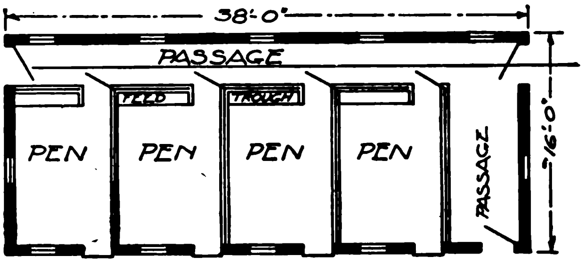
GABLE-ROOF FOUR-PEN PIGGERY

A well-built winter hog house. Size, 38 by 16 feet. Fencing can be arranged so that each group of pigs can have its own separate run yard. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design A258L.

Four-Pen Hog House—Design A258L

This design is intended for the smaller farms where only a few hogs are kept.

It is 16 feet wide by 38 feet in length, with a passageway in front of the pens for convenience in getting the hogs or pigs in or out of any pen. There is another passageway across one end, which is intended for a feed room. Possibly a feed cooker in this room would be a good thing.



FLOOR PLAN OF HOG HOUSE.
Design No. A258L

These pens are suitable for farrowing pens, also for winter pens for growing or fattening shoats. It is intended that each pen shall have an outside yard the width of the pen and any convenient length. If the yard pens could run back to a farm lane, the arrangement would be fine.

There is no ceiling over the pens, but a ceiling may be nailed onto the lower edges of the rafters. An opening through the roof at the peak provides for ventilation through a cupola. The ventilator may be closed with a trap door hanging in the opening to be operated by weight and pulley cord.

For small hog houses where three or four litters of pigs are raised twice a year, this plan offers many advantages.

About half of our troublesome anarchist insects were imported.

We can furnish complete blue-prints for any building illustrated in this book. See under each picture for low price of blue-prints.

Winter Hog Houses

Pure bred hogs usually have very little hair on them. For this reason, they need protection in the winter time more than any other farm animal. Hogs have been neglected by nature in this respect. There are hundreds of farms where larger animals wearing thick, hairy coats are carefully housed, while hogs are left out in their nakedness, with nothing but a loose board roof over them. Such farmers have bad luck with their hogs, and they never can account for it. They seem to thing that a hog is tough, and that a certain amount of abuse is good for it. Hogs are the worst abused of all domestic animals, and they are the most profitable when handled intelligently.

A great many farmers have the idea that they cannot afford a hog house. The fact is, that well bred hogs, properly housed and fed, will pay for a house quicker than any other kind of livestock. For winter feeding, nothing is quite so good as a long hog house with an alley down the center and pens on both sides. The pens may be small for winter, as small as 8 by 10 or 8 by 12 feet, because it is not good practice to put more than five or six hogs in one pen. Too many pigs together will pile up to keep warm, and the ones at the bottom sometimes smother to death.

In the small pens, a movable, raised platform to hold the bedding is a great comfort for the pigs; it insures a dry bed when the floor of the hog house is sloppy. Hogs will stand considerable cold if they have plenty of dry bedding and are so divided that they can sleep four or five in a nest.

Sixteen Pen Hog House—Design A257L

A hog house with very small pens for special show pigs is shown in design A257L.

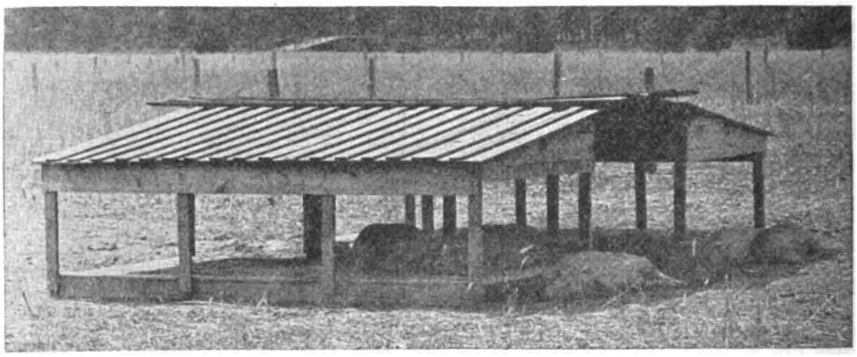
These pens are only 5 feet wide by 8 feet in length with a 4-foot alley between, but it gives pens enough to divide up a lot of show hogs in such a way that the best may be easily selected out for selling or for show purposes. It is a special plan that will appeal to breeders of high priced hogs.

With a very little altering, these pens can be used at farrowing time and probably would be used for that purpose on almost any stock farm.

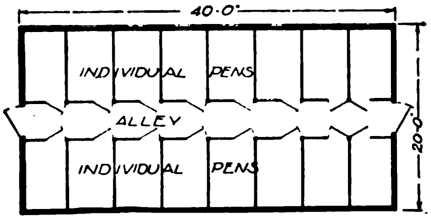
Such a building is supposed to be placed near the regular hog house with a runway to transfer hogs or pigs from one house to the other.

Shade for Hogs

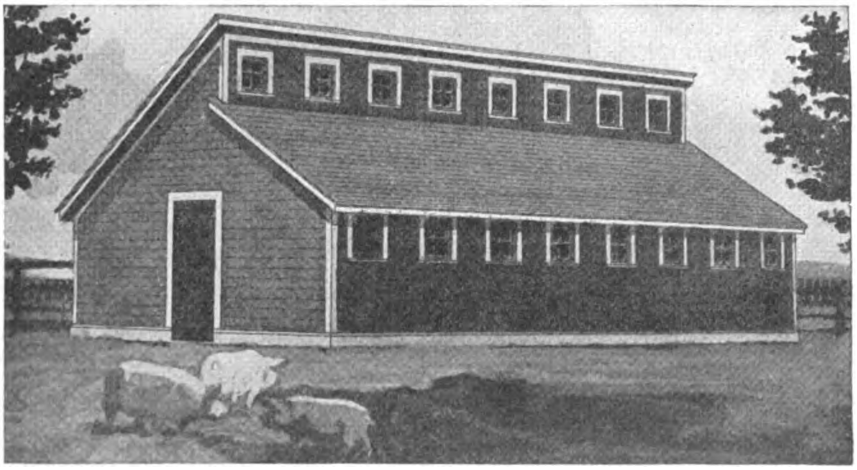
On some farms shade trees are scarce; hogs need protection from the hot sun. When a hog is given its freedom in pasture, it will start feeding almost as soon as daylight; then, when the sun gets warmer, it prefers to lie in the shade until towards evening. This gives the hog two feeding periods in the twenty-four hours. Between times it is good policy to make a hog as comfortable as possible. The illustration shows a cheap sun shelter that may be hauled off when pastures change.



Where there is no natural shade for hogs, farmers should provide an inexpensive board shelter such as this. This shade is one of the several in use at the Purdue University Agricultural Experiment Station, La Fayette, Indiana.



Interior Arrangement of Hog House No. A257L



SIXTEEN PEN WINTER HOG HOUSE

A well built saw-tooth hog house, 40 by 20 feet on the ground, which contains sixteen individual pens. This is a suitable house for show stock. We can furnish complete blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design No. 257L.

Shade hog houses are better when made portable. They can be put on fresh ground as often as necessary, and in case of hog cholera they may be hauled to a different pasture where the isolated hogs are kept, then, when the cholera is cured, these houses may be rolled over and thoroughly disinfected, the ground plowed and the buildings used in other places with safety.

If two of these hog shades are placed a few feet apart, facing each other, 2x4's may be laid across between them to support loose boards. This plan makes two structures furnish as much shade as three separate ones.

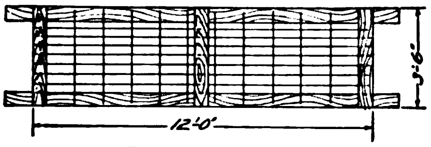
These little buildings are made of boards with 2x4's and 1x4's for cross braces, to keep them from racking to pieces while being moved. The sills are made of 2-inch plank, 8 inches wide, rounded at one end like sled runners.

Portable Hog Fences

In raising hogs for market, it is necessary to grow certain crops to hog down. If the hogs are permitted to run the field over, they tramp down and waste too much, so it is a matter of economy to have fences to confine them to certain parts of the pasture. They will then eat the feed without much waste. This applies especially to such crops as sorghum, wheat, oats, rye, rape, soy beans, cow peas and such.

For a comparatively small field, panels can be made of 1 by 6 fencing boards, nailed together near the corners, as shown in the little drawing. Hog fencing is stretched across and fastened. The panels are wired to temporary posts driven into the ground with a sledge hammer. The posts used for this purpose are old gas pipes, 1-inch or 1¼-inch second-hand pipe. Used pipe is kept by junk dealers in all large cities. The panels should be nailed, and the nails clinched. In addition to this, there should be a carriage bolt through the center of each crossing of the boards. This will require six bolts to a panel. The durability of the panels depends upon the solid manner in which they are put together. In cutting the wire fencing, make it long enough so the wire will make a turn around the end pieces. The panels are 3½ or 4 feet high. 3½ is plenty for hogs, but cattle or colts should have a 4-foot fence.

For a large field, where more hogs are kept, a more satisfactory temporary fence is simply a roll of woven hog wire, stretched along and fastened to a line of gas pipe posts with stakes driven at distances of from 8 to 12 feet. Smaller short stakes with hooks on them hold the bottom wire down to the ground. These stakes may be of gas pipe with the top end battered enough to catch the bottom wire.



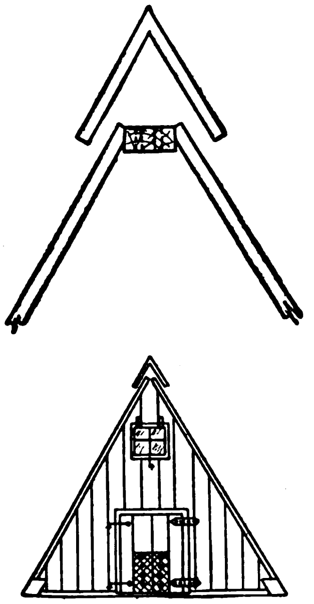
Portable Fence

This kind of a fence requires a good, solid post at each side of the field. These end posts may be permanently set into the side fences. When done with, such a fence is rolled up and hauled off on a stone boat and stored under the tool shed until wanted again.

A Ventilated Hog Cot

A portable, "A" shaped hog cot with ventilator in the peak is shown in this drawing. In most hog cots, ventilation is neglected, or if it is attempted, the little house is made drafty. Ventilation makes the difference between a dry cot and a damp one. It is more difficult to ventilate a small house than a large one. The easiest way is to use a 2 by 4 at the peak, turning the flat side down. Bore this full of holes before nailing the siding to it. Cover this with one thickness of thin cotton cloth, tacked on to make it stay in place, then cover this with an inverted "V" shaped trough, as shown in the detail drawing.

This arrangement will let the air out at the top. Bore plenty of holes; and if it is found, by practice, that too much warm air escapes, cover the holes by sliding in a lath over some of the openings. Air may be admitted near the bottom in front, by boring holes and covering these holes with cloth in the same way. The object of the thin cotton cloth is to prevent a draft. The air will find its way through the meshes of the cotton, and there will be no noticeable draft.



Ventilated Hog Cot

Every wooden floor in the hog house should be double and laid to break joints. Otherwise, dampness will swell the boards, and then, when they become dry, they shrink enough to make an opening. Cold air blowing through a crack makes trouble.

Breeds of Swine

There are a good many recognized breeds of swine, but only four or five are popular in the United States. According to numbers, the Poland China comes first, then Berkshire, Duroc Jersey, Chester White, Essex, Victoria, Tamworth, Cheshire and Hampshire.

POLAND CHINA. There are probably more Poland Chinas in the United States than all other breeds. They are especially popular in the corn belt.

Poland Chinas originated in southwestern Ohio. The foundation stock was Big China, Poland, Byfield, Berkshire and Irish Grazier. Various names were given to the breed, but finally, in 1872, the name Poland China was established. The color is black, with six white points — feet, face and tip of tail. The Poland China is the greatest converter of corn into valuable pork of all animals, but it is not confined to making good use of any particular ration, for it is a good forager. Mature boars weight from 500 to 600 pounds when eighteen months old.

BERKSHIRE. The Berkshire breed originated in England, and it has become very popular in the United States. The first Berkshire came to this country about the year 1830; they have been coming ever since. The Berkshire is marked similarly to the Poland China; that is, the color is black, with six white points. The Berkshire has a shorter nose and the face is dished to a greater degree than the Poland China. The size of the two breeds and early maturity are quite similar. The size of litters of the Berkshire is rather larger and the Berkshire is rather the better grazing hog. The Berkshire matures early. With proper feed and care, pigs will weigh 240 to 300 pounds when a year old.

DUROC JERSEY. The foundation stock of the Duroc Jersey breed dates back to the time of Daniel Webster, who imported dark red pigs from Portugal in 1852.

It was in New Jersey and New York states that the breed was finally established by crossing New York red hogs with the imported ones and adding some outcrosses of Red Spanish and Berkshires. They were originally called Jersey Reds. This breed of hogs are active on foot and are noted as being good foragers, capable of making 275-pound hogs in twelve months. The Duroc Jersey is not subject to sun scald. The breed is very popular in the East and West, and in the corn belt, and they are also recognized in the South as being especially well adapted to southern conditions.

CHESTER WHITE. As the name implies, the hogs are white in color. The breed originated in Chester County, Pennsylvania. The foundation stock consisted of white hogs from England, Big Whites and Large Yorkshires. The Chester White is the most popular white breed. It is the largest of any breed, although the great monsters that used to be produced forty years ago are no longer bred. They were too coarse. The present Chester White is well adapted to ordinary farm conditions. It does well on pasture and makes good use of a more condensed ration at fattening time. The sows are prolific, but somewhat cross as to disposition. Because of their color, these hogs are subject to sun scald in the South.

YORKSHIRE. The Yorkshire is an English breed. Yorkshire hogs have been used to improve most other breeds of hogs, whether white or black. At present, there are three sizes of Yorkshires—large Yorkshire, medium Yorkshire and small Yorkshire. They differ principally in size. The conformation corresponds, being similar in the different breeds, although the foundation stock for the small Yorkshires had a cross with the Chinese hog, which reduced the size. The large Yorkshire is an immense hog. The small Yorkshire is less profitable, owing to its small size, but many farmers keep the small Yorkshire for their own use, as the pork is considered superior to any other breed.

TAMWORTH. The Tamworth is a bacon hog which originated in England. It is said to have come directly from the red hog of the forest of the time of King Arthur. The Tamworth is a long-bodied, slick-legged red hog, possessing great vigor and fecundity. The proportion of lean to fat meat is greater than any other breed. For this reason, it is very popular with packers, although they are not disposed to pay more than the market price. From government feeding experiments, it would seem that Tamworth pigs increase in weight as cheaply as any other breed, but hog men won't believe it. They prefer other breeds for profit.

CHESHIRE. This is a small white pig which originated in New York State. The foundation stock was the large, improved Yorkshire and Suffolk, bred together with native white hogs. The breed dates back to 1859, when some of the pigs were exhibited in the New York State Fair. They are small and possess early maturing qualities and are considered good for bacon.

HAMPSHIRE. The Hampshire or thin-rind hog originated in Hampshire, England. Specimens of this pig were brought to Kentucky in 1835, where they have been carefully bred ever since. The color is black, with a white stripe around the body which includes the front legs. This stripe may be anywhere from 4 inches to 12 inches in width. It is a peculiar marking which stamps the Hampshire with a distinct individuality. It is one of the larger breeds. Pigs attain the weight of 300 pounds when a year old.

SUFFOLK. The white hog known as the Suffolk in America is somewhat confusing. The original Suffolk breed

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

in England is black. The black English Suffolk is small and early maturing.

ESSEX. The Essex breed is black. It originated in Essex County, England. Specimens of this breed in America are medium in size, 400 pounds at maturity is considered large.

LARGE BLACK. This is another English breed that has existed in Cornwall and Essex and some other counties for a good many years. There is a society in England that promotes the welfare of this breed. The color is black, with large thick ears falling forward, medium dished face and a somewhat lanky appearance, like bacon hogs. It has a coarse appearance. The weight, dressed, should be from 150 to 180 pounds at six months.

RAZOR-BACK HOGS. It is commonly supposed that razor-back hogs are natives of America, but this is very doubtful. The first of these slab-sided, long-nosed, long-legged, fighting, wild animals, probably escaped from the pens of the early settlers before the Southern country was settled very much. The warm climate and the great amount of forage in the woods permitted them to live and increase in numbers.

Attempts have been made to use razor-back hogs to establish certain desirable characteristics in domestic breeds. These experiments have not proved very successful, but it may be that the time has been too short. The idea is that great rustlers might reproduce some of their hardy characteristics in the new progeny.

Sowing Soy Beans in Corn Fields

Because soy beans and cow pease add to the work in corn fields, these valuable corps have been badly neglected. Most farmers have tried some kind of a cover crop after the last cultivation, but comparatively few have followed the method systematically enough to get the full benefit. If the soy beans make a good growth, which they often do late in the season, they furnish a splendid protein feed for hogs.

It is customary with a good many farmers to hog down corn. This means that the hogs do the harvesting, and, as a matter of fact, they do not waste much corn. A mixed lot of hogs, such as farmers usually have, some weanlings, a good many shoats and a few old hogs, make good use of a mixed ration, such as corn, corn fodder and soy beans.

Protein for young pigs and growing shoats is absolutely necessary for their proper development. The gain they make while cleaning up the corn and soy beans pays well for any entanglement caused by the vines.

A few years ago, a good many farmers tried whippoorwill cow peas in the corn for silage. The theory was, that the combination of cow peas and corn would make the very finest silage; but not very many farmers undertook the job the second time. The cost of cutting the corn and the profanity caused by the unwinding of the vines from their various unexpected connections, caused too great a wear and tear on the nervous organization. But when the corn is hogged down, there is really no objection, because the hogs have plenty of time to straighten out the tangles.

There is considerable saving in seed by putting in the peas with a common hand corn planter. They are planted close to the hills, the vines reach over to the stalks and climb four or five feet. One objection of growing crops of this nature is the cost of seed. When it comes to hand planting, it is a question whether the cost of labor of hand planting is justified. Usually, the seed in the corn field is put on too thick. The corn occupies a good amount of ground, so beans or peas have not the same chance to grow as they have in the open. If planted too thick, the legume does not bear pods.

Sometimes the lack of moisture prevents the growth of a second crop in the corn field, but we have to take chances. "We may get rain tomorrow," is the only plan for a farmer. If you can't find the seed, consult with the lumber dealer.

Designing Gambrel or Curb Roofs

The illustrations show seven different sizes of gambrel roofs intended for barns.

The barns range in width from 30 feet to 42 feet, and in height from the floor to the peak as follows:

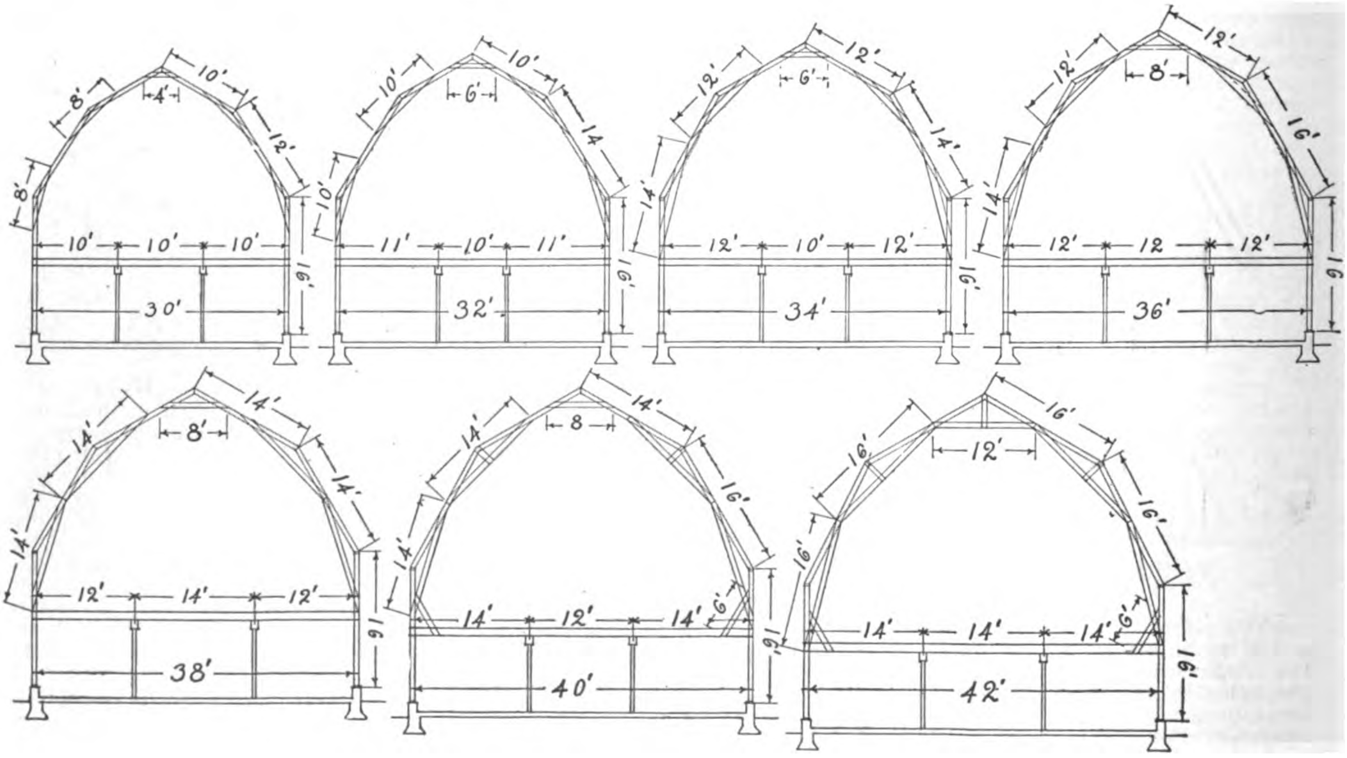
30 feet wide, height 32 feet 6 inches.
32 feet wide, height 34 feet 6 inches.
34 feet wide, height 36 feet.
36 feet wide, height 37 feet.
38 feet wide, height 37 feet.
40 feet wide, height 38 feet 6 inches.
42 feet wide, height 40 feet.

The size of roof timbers for roofs up to 36 feet wide, are as follows:

The rafters are 2 by 6 inches, placed 24 inches on centers. The truss ties are 1 by 8 inches, well nailed to each side of each rafter. The collar beams are 2 by 6 inches, bolted to one side of the rafters.

For barns from 38 to 42 feet wide, the rafters are 2 by 6 inches, placed 24 inches on centers, and the truss ties and collar beams are 2 by 6 inches, bolted to the rafters on one side only. All floor joists are 2 by 10 inches. The girders are 2 by 10 inches, built up four planks in thickness.

The advantage of these roofs is the great gain in mow space, with a clear sweep from end to end, leaving splendid facilities for operatng a hay fork and for blowing in chaff from the stacker.



Proportions and Lengths of Barn Framing Members for Strong, Neat Gambrel Roofs for Barns for 30 to 42-Ft. Spans

NEIGHBORHOOD IMPROVEMENTS

Get Together!

Community Service Boar

In one community where the hogs were not as good as they should be three farmers were sitting in the little office at the lumber yard discussing the hog question. The cost of a pure-bred boar was mentioned, when the lumberman made this proposition:

"Well, boys, if you fellows will act as a committee of three to select a hog you think the community needs, I will stand in with each of you and pay my one-quarter share of the cost and I will keep the hog here at the lumber yard for the free use of any farmer who will breed a sow."

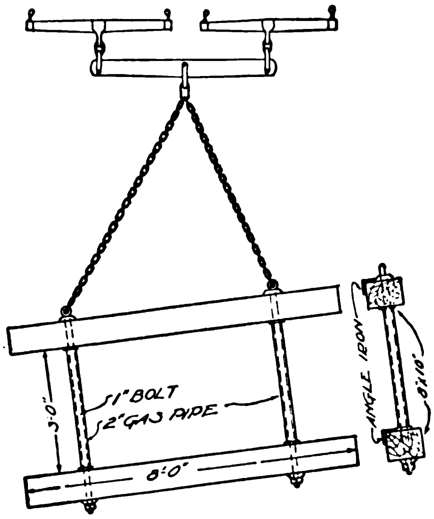
The proposition seemed so interesting that the three farmers agreed to it. In a month's time the lumberman was asked to make his offer good, and he did so. That was a year ago.

Today there are hundreds of high grade pigs in that community, as a result of that little meeting between the three farmers and the lumber dealer. They are all thoroughly well satisfied with the experiment. At the present time more than a dozen farmers are making plans to secure the best pure-bred hog stock that they can buy.

The Split-Log Road Drag

The first split-log road drag was made by a farmer to level the road in his lane leading into the farm. The lane roadway never had been properly graded, the land was low and inclined to be mucky. He had a log, which he split in two, turned the two pieces up on edge and connected them very much like the ordinary road drag in use today. After every rain he hitched a pair of horses to this simple device and went over the road between his buildings and the highway. The second time over, the improvement was noticeable, so he kept it up after each rain shower and several times while the frost was coming out of the ground. In a few months' time the dragging made a good driveway of what was formerly a wretched lane.

Every farmer knows the value of a road drag when it is properly used. The trouble is to use it at the psychological moment. While the road is being wet down, farmers have to wait to get on the land. As soon as the road is dry enough to drag, their impatience to work in the field is so great that the road is neglected. This happens in every community, except a few where one man is paid to use the drag at the proper time, and fined if he fails to do so. Even then, it is necessary to select a man living at the far end of the beat. No man has been discovered who can take a drag far beyond his own property. He will drag the road very carefully between his home and the town, becauses he uses the road himself. It is much easier to drag two miles to town than to drag one hundred yards in the other direction.



Well-Built Split-Log Road Drag

Split-log drags, as formerly made, have gone out of use. The lumberman now sells two lengths of timber, and this is shod at the cutting edge with steel, as shown in the sketch.

But for want of a better name, it is still called the "split-log road drag."

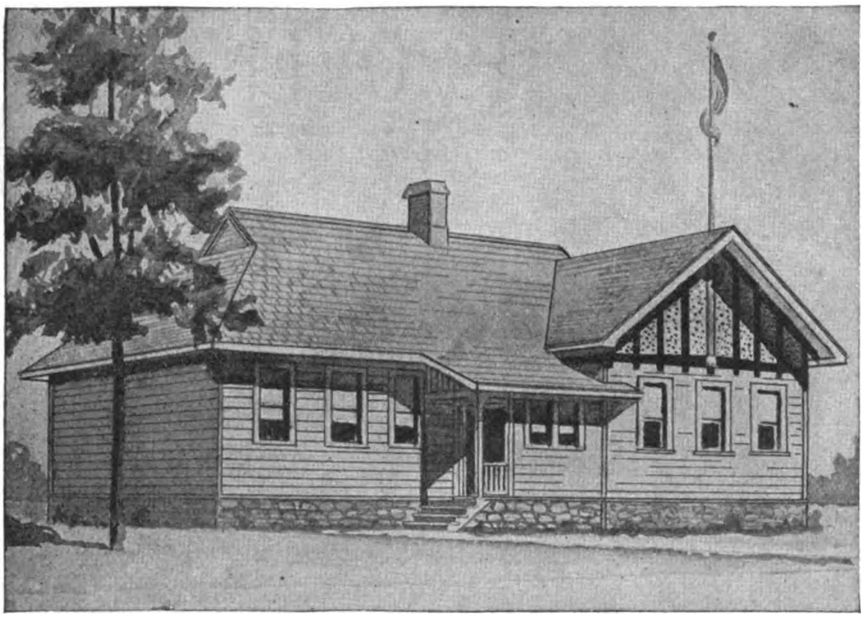
Government Bulletins at the Lumber Yard

The owner of the lumber yard in a good farming community sent one of his boys to the State Agricultural College.

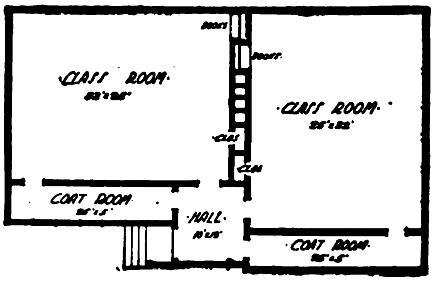
When the boy came home, he brought a lot of bulletins from the different State universities and experiment stations, and told his father how to get such bulletins. The bulletins were left in the office at the lumber yard, and as farmers dropped in, they became interested, and often asked to carry home bulletins on subjects that they were especially interested in.

This was the nucleus around which a very successful farmers' club was organized. The young man acted as secretary and each farmer put up a small amount of money to pay for postage and incidental expenses, so that in a short time they had the latest and best information on modern and up-to-date farming.

In a short time they organized under a regular constitution and adopted by-laws which provided for the necessary board of directors, with properly authorized committees. The committee



Improved Design for a Two-Room Village or Country School to Afford All Accommodations



Floor Plan of Two-Room Country School

meetings were gradually held in the lumber office, but it required the town hall to hold the regular meetings.

Farmers need an organization of this kind to get them out of the ruts that they are sure to get into when they follow their own line of work without the necessary variation.

Organization helps a farmer by inducing him to help others. Nature has so designed the human makeup that it cannot work successfully alone. When a man undertakes to help his neighbor, he invariably helps himself.

Manual Training in Rural Schools

Manual training means the training of the brain, the eye and the muscles in unison.

Rural manual training teaches this much and more. It hitches the scientific principles of plant growth to the enthusiasm of youth.

"The learning of a thing by the doing of it" has been applied to the testing of seeds in a great many rural schools, and this is but a branch of manual training.

The lumberman sells many things that never grew on tree stumps. Look over his stock.

Attractive Two-Room Village School

At this time, when village and country life problems are receiving so much attention and when special thought is being given our public school work, a consideration of this improved two-room school design will be profitable.

Our children who go to school in small buildings deserve to have just as many advantages as the city children who go for their schooling to buildings of a hundred rooms or more. The essentials of proper lighting, heating and ventilation should be just as carefully taken care of in the small building as in the large. Coat-room accommodations should be just as ample.

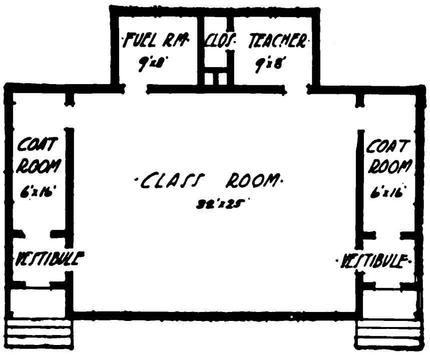
Mr. G. W. Ashby, the well-known schoolhouse architect of Chicago, has designed this two-room village or country school building to show what can be done in the way of an improved schoolhouse without undue burden on the taxpayers. This building is timber constructed, clapboard in the main story, and with gable ends sided with cement plaster on metal lath, and ornamented with exposed timbers. Two standard-size class-rooms are contained, each with coat-room opening both from the entrance hall and from the class-room. No space is wasted in this building and no expense has been added to bring out any architectural effect. The design has been worked out on simple business lines, and the result is highly pleasing because of the inherent harmony of the various parts.

Model One-Room School House

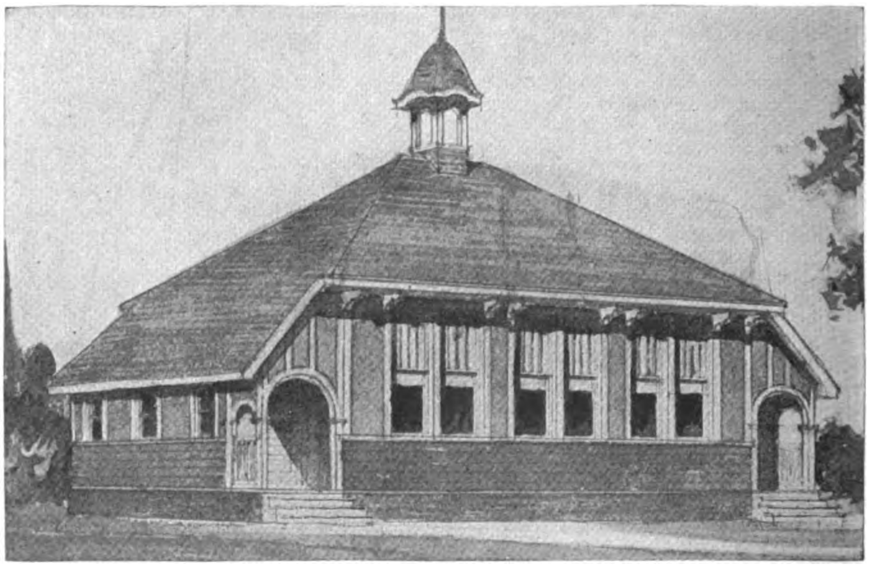
Another of the many artistic and practical schools designed by architect G. W. Ashby, of Chicago, is shown below. While most of his work comprises large city and consolidation schools, the smaller school buildings have not been neglected.

This is a one-room school; and is especially suited to communities where larger building is not needed. The entrances on each side of the front give upon vestibules from which open the cloak rooms—one for pupils of each sex. To the rear of the class room are provided a fuel room and teachers' private room. Special attention is called to the lighting. Windows are arranged along one side only. The light comes from these over the pupils' left shoulders, which is highly desirable in preserving the eyesight.

The building gives a beautiful effect, and ought to find much favor over the common ordinary rural school house.



Floor Plan of One-Room School



A One-Room Country School of Modern Design and Arrangement

List of Agricultural Colleges

Write to These for Free Bulletins and Other Information about Farming

Alabama—Auburn, Normal, Tuskegee Institute. Arizona—Tucson. Arkansas—Fayetteville. California — Berkeley. Colorado—Fort Collins. Connecticut—Storrs. Delaware—Newark, Dover. Florida—Gainesville, Tallahassee. Georgia—Athens, Savannah. Hawaii—Honolulu. Idaho—Moscow. Illinois—Urbana. Indiana—La Fayette. Iowa—Ames. Kansas—Manhattan. Kentucky—Lexington, Frankfort. Louisiana — Baton Rouge, New Orleans. Maine—Orono. Maryland — College Park, Princess Anne. Massachusetts — Amherst. Michigan — East Lansing. Minnesota—University Farm, St. Paul. Mississippi—Agricultural College, Alcorn. Missouri — Columbia, Jefferson City. Montana—Bozeman. Nebraska — Lincoln. Nevada — Reno. New Hampshire—Durham. New Jersey, New Brunswick. New Mexico—State College. New York—Ithaca. North Carolina — West Raleigh, Greensboro. North Dakota — Agricultural College. Ohio—Columbus. Oklahoma—Stillwater, Langston. Oregon—Corvallis. Pennsylvania—State College. Porto Rico—Mayaguez. Rhode Island—Kingston. South Carolina—Clemson College, Orangeburg. South Dakota—Brookings. Tennessee—Knoxville. Texas—College Station, Prairieview. Utah—Logan. Vermont—Burlington. Virginia—Blacksburg, Hampton. Washington—Pullman. West Virginia—Morgantown, Institute. Wisconsin—Madison. Wyoming—Laramie.

Corn-Testing Clubs for Boys

Considerable interest has been taken by boys in some corn-growing communities in competition with each other for prizes in corn growing.

Instructions in regard to obtaining the best seed and the most profitable manner of testing the seed for germination may be had at any of the State universities or experiment station in the corn-growing states. A letter addressed to the dean of the university will secure bulletins, score cards and instructions for forming boys clubs.

Fruit Canning Competition for Girls

In some rural communities prizes are given to the girls for the best canned fruits and vegetables. Sometimes the competition is held in connection with the local fair; in other places the high school undertakes the management. It is another way of teaching practical information in a very thorough manner.

The general arrangement often is under the supervision of the State experiment station.

Municipality Building Proves Boon

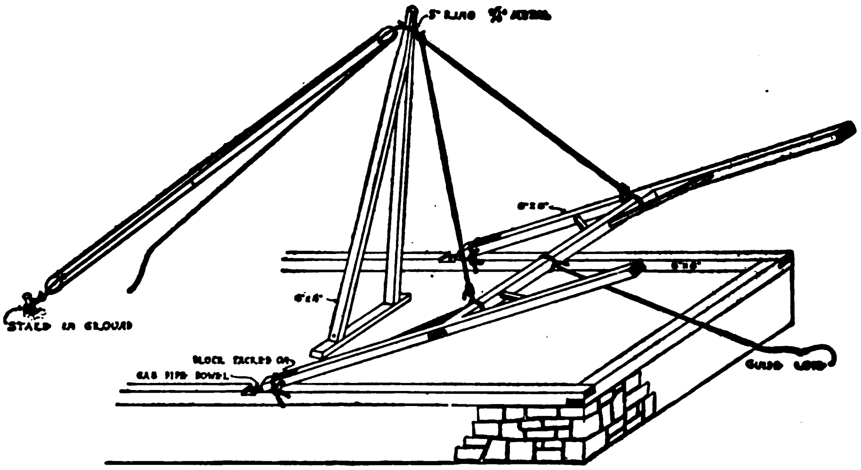
Social life in one of the Wisconsin counties has been very much improved by the building of a town hall with culinary and other club feature attachments. Bonds were issued to raise the money for the building.

The town itself has a population of about 3,000, and it is a pretty safe prediction that four-fifths of the residents of a town this size are directly or indirectly interested in farming, so that the interests of the whole community or town are almost identical.

The building is 50x100 feet and cost a little over $7,000. It is owned by the village and managed by the village clerk. There is an extension university course; school plays are given, also amateur theatricals, banquets, suppers, harvest festivals, farmers' institute meetings, dancing parties, art exhibits, firemen's meetings, orchestra practice, etc. Altogether, it seems to be a first-class get-together idea.

Phosphorous

The greatest problem in agriculture is how to supply phosphorus to the soil. A few years ago the idea was prevalent that nitrogen was the main issue. Agriculturists have solved the nitrogen problem in great measure, by growing legumes. But we don't know how to provide sufficient phosphorus to grow the legumes. Clover is a gross feeder, and it is very fond of phosphorus.



Rig for Raising Barn Bents

Instances are on record where the application of one ton per acre of ground rock phosphate, increased the crop production more than 100 per cent. On some small experiment plots, as much as 200 per cent increase has been secured, simply by feeding sufficient phosphorus into the soil. It is up to the scientific farmers to devise means of supplying phosphorus and so cropping the land as to conserve our resources in this particular. All over the United States crops are being grown that are continually reducing the available supply of phosphorus. To the present time, no concerted effort has been put forth to check this depletion.

Speaking of phosphorus, the farmers of the United States are following the experience of English farmers. More than a century ago, the production of wheat in Great Britain was about the same per acre as the average production in the United States at the present time. Great Britain had less raw land to draw on than we had, so they solved the problem by increasing the acre production.

Through the influence created by the efforts of a commission appointed by the government, the yield of wheat was gradually increased to an average of about 32 bushels per acre, and that seems to be about the present limit.

The increase was brought about principally by the application of phosphoric fertilizers in connection with the use of lime, the growing of live stock and the rotation of crops. The islands of the sea were scraped clean of their rich stores of guano. The battle fields of Europe and the catacombs of Egypt were robbed of their human bones, and millions of tons of phosphates have been imported into England from the United States.

According to this record, it would seem that the soil experts of England a hundred years ago, realized the great problem that is confronting the farmers in the United States at this time. The problem of how to provide sufficient phosphoric acid to enable the soil to maintain a balance of fertility sufficient to produce profitable yields. We have been exporting phosphates in a prodigal manner. Unless we have hidden supplies to develop later, we may pay dearly for the amount of cash received for this product.

Our miserable yield of fourteen bushels of wheat per acre should call quick attention to the paucity of such meagre returns and the necessity of immediate improvement. Under the plan adopted by most farmers, that of growing what may be produced easiest without any thought for the future, the productivity of the soil is being reduced to such an extent that drastic measures will have to be adopted.

Raising the Barn Frame

The illustration shows a simple and effective plan for raising barn bents. The derrick is rounded at the top and a heavy iron ring wtih a hook attached, is dropped over the top. This ring is made of ¾-inch wrought iron and is 5 or 6 inches in diameter on the inside. Two strong ropes are attached to the ring, as shown. Then, on the opposite side, the double block is hooked. The single block is attached to a stake driven into the ground at the proper distance from the bottom of the derrick.

In using this hoist as a puller and lifter, and as the hitch is elevated higher by the rising of the bent until the pull is higher than the derrick, the ring slides off and the pull is direct from the upright timber to the driven stake. The derrick or jack is made of 4 by 4 timbers and made just long enough to raise the block to an angle of 45 degrees. It is desirable to have the ring slip off at about this angle.

About a 150-foot length of ¾-inch

rope is required for the block and tackle attachment. The same outfit works well in raising gambrel roof trusses.

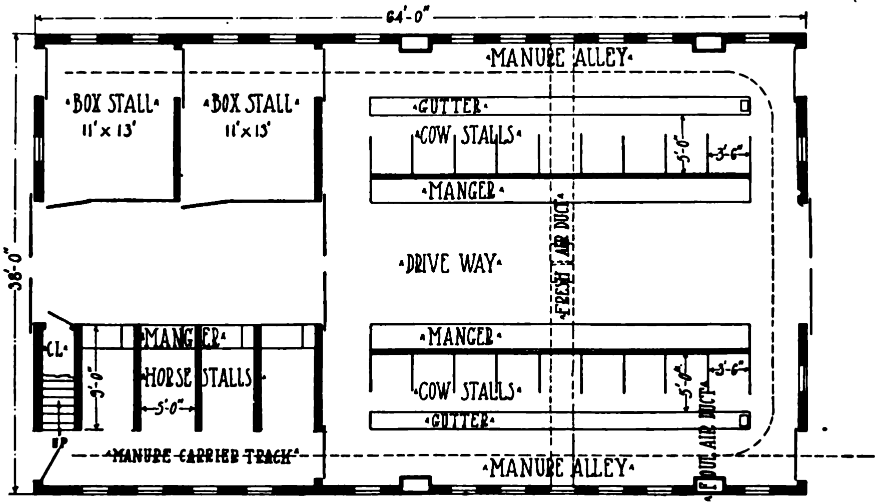
Two important points must be remembered: The foot of the bent or truss must be securely fastened before the lifting of the truss begins; also a strong guide rope in competent hands must be ready to prevent pulling the bent or truss too far over. The local lumber dealer can supply the materials.

Sixty-Four by Thirty-Eight Farm Barn—Design A255L

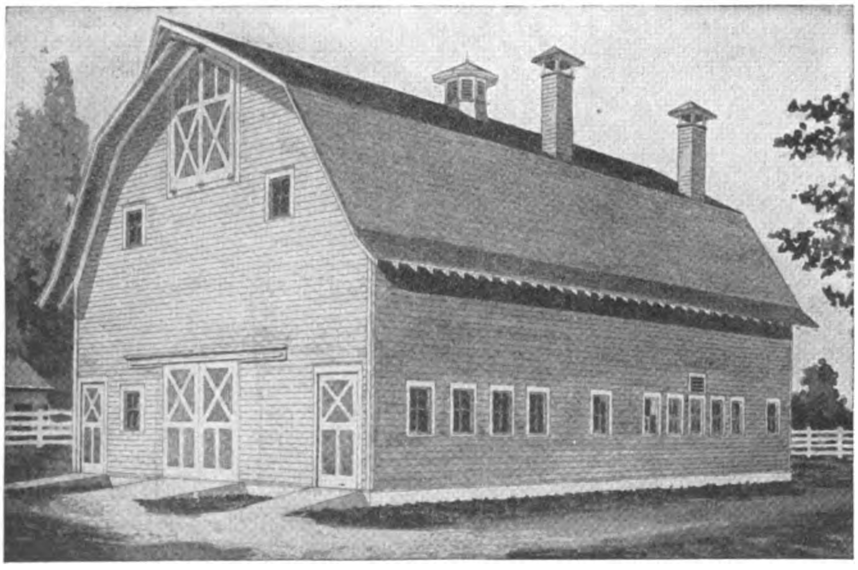
A combination stable for both horses and cows is given in plan A255L. This plan was designed for a farmer just going into the dairy business. He wanted a cow stable to hold from 16 to 20 cows, and he needed a small horse stable. He worked 4 horses and raised a colt or two, so the plan was arranged to accommodate 4 horses in single stalls and to provide a box stall or two for the colts, and to be used at certain times for a brood mare. His intention was to use the corner stall for colts and leave the outside door open, so they could run out and in as they felt like it.

The horse department is partitioned off from the cow stable by a solid partition that reaches to the floor overhead. There are four sliding doors, which open or close the openings and make entrance from one to the other easy. It will be noticed that there are plenty of doors in this plan and that most of them are sliding doors. A sliding door in a stable makes less trouble than a swinging door. There are places where a sliding door cannot be used, but in barn construction generally a sliding door is the better of the two. They are not affected by winds and are not so likely to get out of order.

In this stable barn special attention was given to the ventilating system. Large flues draw off the foul air near the gutter at the side of the stable. These flues are so constructed as to give the same area below the stable ceiling as above, but the shape is different, as the diagram shows.

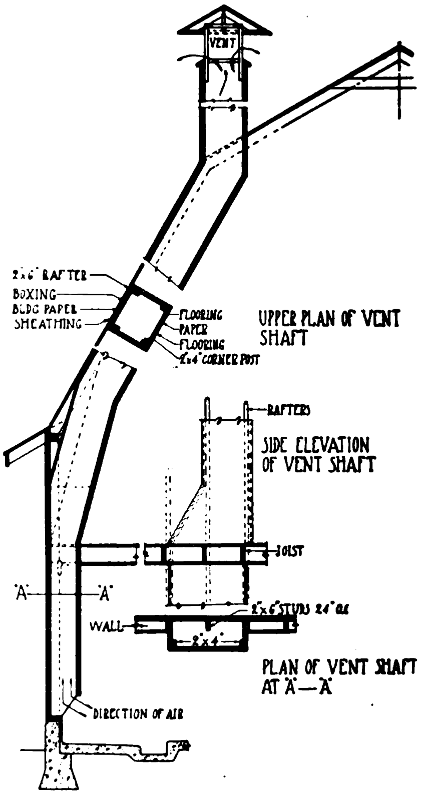


Ground Floor Plan of Barn No. A255L



SIXTY-FOUR BY THIRTY-EIGHT FOOT GENERAL BARN

A well-planned barn with gambrel roof with stalls for 18 cows, 4 horses in single stalls, and two large box stalls. Special attention is given in this barn to proper ventilation. Size of barn, 64 by 38 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. When ordering, ask for Design No. A255L.



Detail of Foul Air Flue for Stables

The section plan shows the manner of building the floor and cow mangers on one side and a wooden horse manger on the other side.

This section plan also shows the grain bin on the second floor, and it gives the size of timbers used in the construction of the barn.

Ventilation of Farm Buildings

In four days a cow will breathe her weight in air. Air is not good breathed twice. The second time through, it contains too much carbon dioxide, too little oxygen and too much moisture.

The principle of the circulation of warm air should be understood by every farmer who stables domestic animals. The principle itself is simple, but the various shapes and kinds of stables complicate the problem.

Warm air is lighter than cold air and so, naturally goes up; when it strikes the ceiling it spreads, theoretically, in every direction until it reaches the sides of the room. If a building is constructed so the air currents follow this natural course, they load up with the impurities of the atmosphere, and as the air becomes foul it gets heavier and settles toward the floor. For this reason air near the floor is more contaminated than the warm air near the ceiling.

Following this natural law, it is right and proper to place the ventilator in the side of the stable with the opening near the floor, so that the worst air in the room is taken out through the flue. The coldest air in the stable in winter time is warmer than the air outside. This condition assists ventilation by its natural propensity to climb, like the hot air in a chimney.

In addition to supplying a proper escape for bad air, it is just as essential to provide an intake for pure air.

F. H. King, formerly professor of agriculture and physics in the University of Wisconsin, has probably done more to promote the proper ventilation of farm stables than any other man.

Professor King advocates taking air into a cow stable from the outside just above the sill, but he does not admit this air into the stables until it reaches a point near the stable ceiling. It is carried through chambers or flues in the side walls of the stable and poured out into the room over the backs of the animals. The outtake starts near the floor in the center of the stable. The reason for this is, that in most cow stables the cows face in, and as the breath of animals is warm, the stable atmosphere is warmer in the center of the stable than it is at the outer walls, and ventilation from the center is encouraged or given a good send-off up the flues by this warmth.

Theory and practice will not always work out according to rule. There are many badly constructed buildings in which the circulation of air inside is influenced by the movement of the air outside. Also the shape of buildings has an influence, the height of ceilings has something to do with it, and the amount of cubic air space per pound weight of live stock enters into the proposition.

A lot of cattle in a small stable will be warmer than a few cattle in a large stable. Ventilation is materially assisted by the body heat of animals. Low ceilings help the circulation of air to draw out the foul bottom air and replace it with pure air.

All these complications are less serious than they read. It is comparatively easy to change the air in a stable if a man really tries to do it.

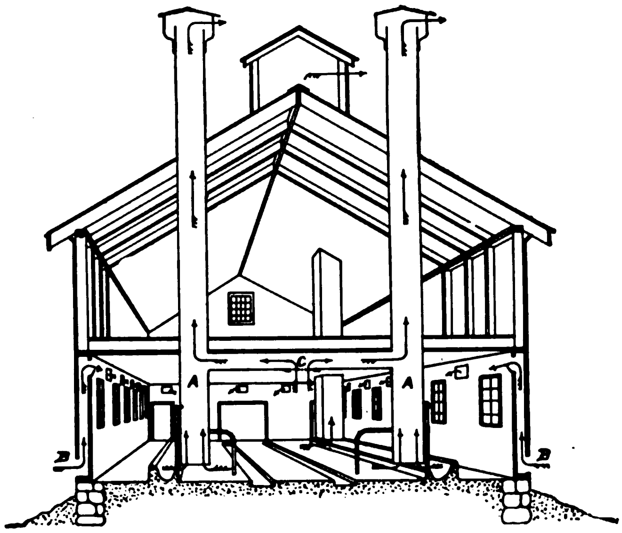
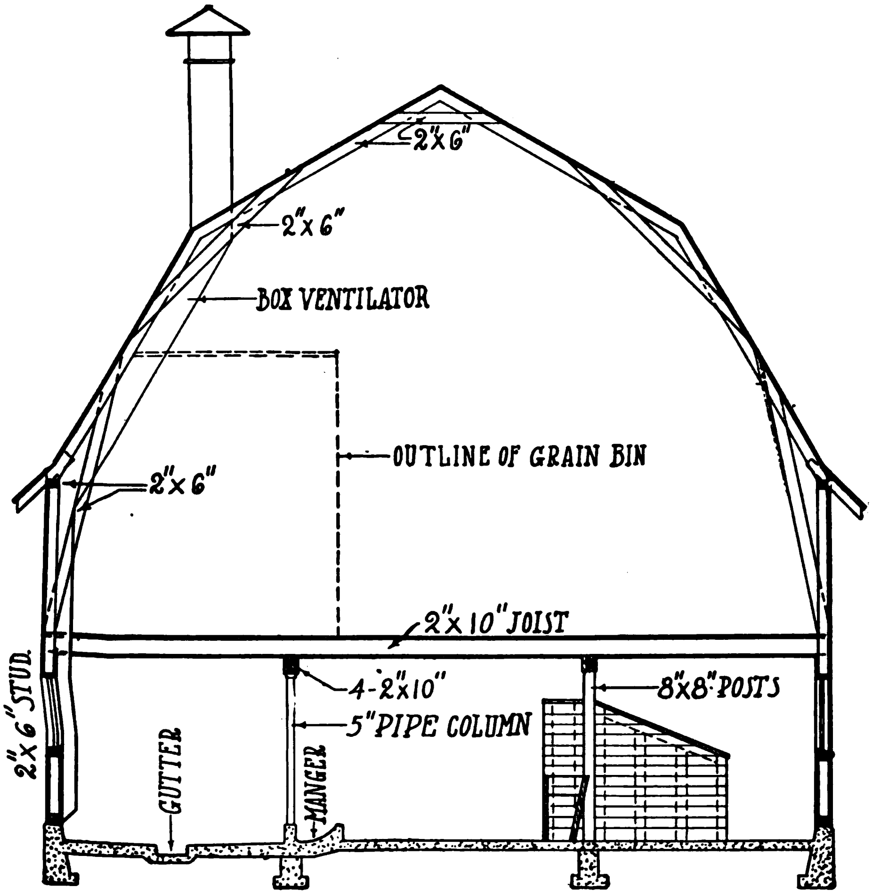


FIG. 1. VENTILATING SYSTEM FOR BARN
Showing intake openings at B B around walls, and outtake pipes at A A

Those who try, come nearer accomplishing things than those who are indifferent. The health of domestic animals is worth the effort.

The local lumber dealer can help out with suggestions for changing the old stable or building new.



Cross-Section Through Barn No. A255L to Show Method of Construction

Ventilating a Stable

A barn, 32 feet wide and 40 feet long, with a cement basement, was ventilated satisfactorily on the following plan.

There are four ventilating flues or chimneys, "A," in the sketch; these were made air tight from bottom to top, except where the openings are shown by arrows. These chimneys take the foul air from near the floor and carry it out through the roof. At "C," a register was placed, drawing off the heated air from near the ceiling in summer. This may be opened or closed as desired, but the big ventilators are always open at the bottom to draw off the foul air from the stable.

In figure 2, the intake of cold, fresh air from outside is shown at B. There are eight of such intake flues, each 8 by 10 in size, five on the west side, three on the other. The fresh-air flues open inward at the ceiling. They enter from outside the building, near the ground. This plan prevents the warm air from the top of the stable from passing out through the intake flues. The tendency of air is to go up into a building and to go up out of a building.

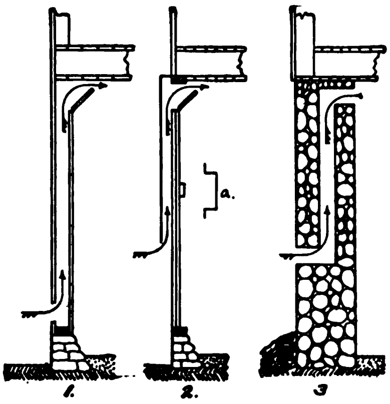


Fig. 2. Intake, or Fresh Air Openings in Various Types of Walls

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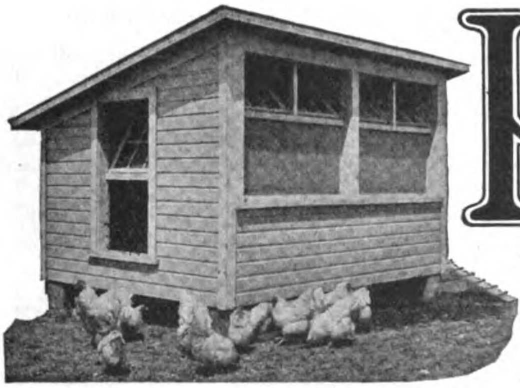
The best time to estimate a crop yield is after it has been threshed.

WE can furnish complete blue-prints for any building illustrated in this book. See under each picture for low price of blue-prints



POULTRY AND POULTRY HOUSES

How to Raise Profitable Chickens

It is not enough to get good poultry. It is just as necessary to have a good poultry house. Scrub stock will live under scrub treatment. But pure-bred poultry has been brought up in the lap of luxury for generations and they must have good winter housing.

Such breeds have been trained to consume good food and have been taught to turn most of it into eggs and flesh. If, however, they are left out in the cold in the fall, winter and spring, to hunt for their own rations, the initial investment will not pay dividends, and the owner will become disgusted with pure-bred fowls.

"The Egg Machine"
First Prize White Leghorn Cock and Hen at Chicago Poultry Show

On the other hand, if he has a proper house, he will pay attention to the kinds and quantity of foods, proper ventilation and a few other essentials. He will then take great interest in his good stock and will make it pay.

Because farmers neglect good breeds, the opinion seems to prevail that it is better to keep crosses. As to that, a first cross sometimes works out very well, but future mixing is not crossing, it is simply raising mongrels.

There is a vast difference in the looks of a farm when all the poultry is fine, when the hens are all the same color, and the ducks all look alike. It shows that somebody has been doing some head work. Brains are appreciated in every walk of life.

The greatest profit from poultry is made by keeping first-class hens on a farm in such a way that they gather most of their living from the fields and fence corners in the spring, summer and fall. Of course, they need attention every day, but they take care of themselves very much better when permitted the range of the farm than when they are shut up in a poultry yard. On every farm, enough feed goes to waste to keep a good many laying hens.

Eggs and poultry really should be considered a by-product on the farm. Hens make good use of the scraps from the house, weeds and weed seeds, grain that falls from the wagons, or grain otherwise wasted in the stock yard or barn, so that regular rations do not cost much in money.

Hens are good foragers when special crops are grown for their use, like buckwheat, sunflowers, and different kinds of legumes.

Poultry may be made to pay handsomely when kept in large numbers, if the farm is run especially for their benefit, but it is a business that requires close attention and good management.

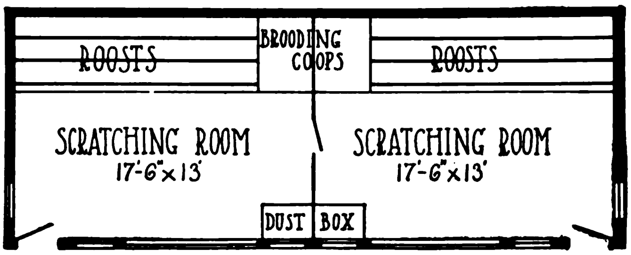
Open-Front Poultry House—Design A242L

In this design there is illustrated a poultry house 36 feet long, divided into two compartments. A house this length, 12 feet wide, gives room enough for two select pens of layers.

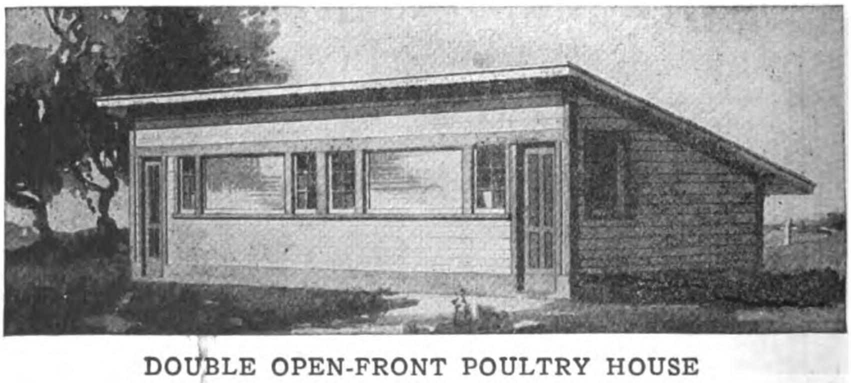
It is generally understood when a man takes the trouble to build a chicken house as large as this that he is planning to keep pure breed poultry. There is a satisfaction about pure bred fouls that only those who have studied them can understand. To some farmers one hen is as valuable as another, because they have never given much attention to breeding. They agree that "pigs is pigs."

In handling poultry in a house like this, one compartment should be used for the breeding stock. When feeding the chickens in the fall and early winter, it is easy to pick out the best hens and pullets for breeding purposes.

A pen of fifteen or twenty selected hens will lay eggs for the foundation of a very valuable lot of poultry. It is



Floor Plan of Poultry House No. A242L



DOUBLE OPEN-FRONT POULTRY HOUSE

A satisfactory design, well lighted and ventilated; approved by successful poultry raisers. Size on the ground, 36 by 14 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A242L.

worth a great deal of time and study just for the looks of having chickens that are all alike.

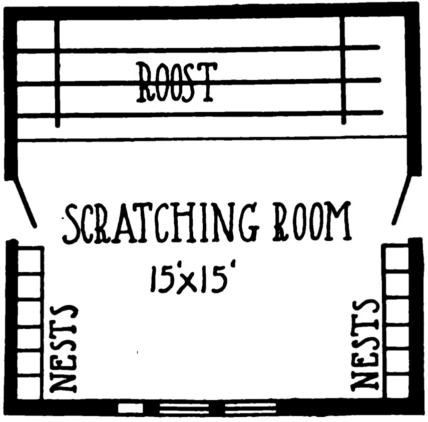
It pays to get a good cock bird from a man who makes a business of breeding the very best. A good poultry man will not sell his best cock birds for less than $5.00 or $10.00. If the man understands and is honest, there is no doubt that the stock is worth it. At the same time, a cockerel from the same pen may be had for $2.00 to $5.00. One cockerel may be just as valuable as the other, but the buyer takes chances on prepotency because he has not been tried out.

A poultry house like this adds enough dignity to the poultry end of the stock business to secure the necessary attention to improve the breeds from year to year. It often happens that one of the girls or one of the boys on the farm will take a special interest in building up a strain of poultry that will win prizes at the poultry shows.

Small Poultry House—Design A241L

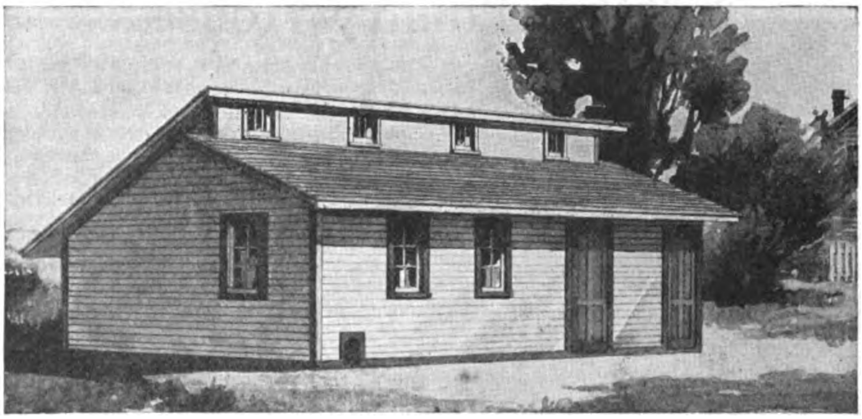
A little poultry house 16 feet square is shown in this illustration. Some farmers do not care to keep poultry except enough to supply the family. The hens hatch a lot of chickens in the spring and they run around the lanes and fields all summer and finally find their way into the kitchen in the fall to feed the farmer and his family.

This is a very profitable way of raising poultry because the birds feed themselves. The first essential is a good warm house for the breeding stock during the winter, and the second requisite is to have breeding stock that is worth keeping.



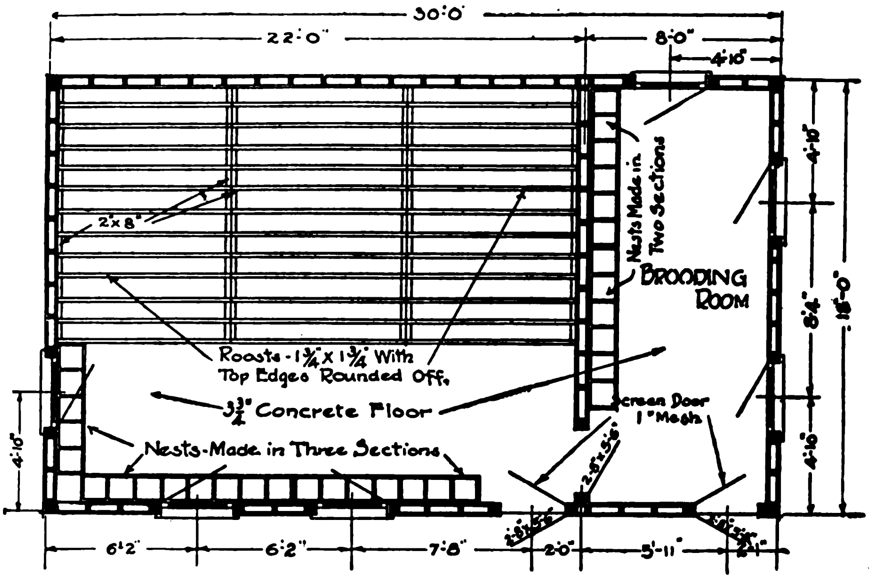
SMALL POULTRY HOUSE

Roosting and nesting house for small flock. Size, 16 by 16 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A241L.



WISCONSIN EXPERIMENT STATION POULTRY HOUSE

An elaborate, yet practical, combination egg-laying and brooding house, recommended by a poultry expert. General dimensions, 30 by 18 feet. We can furnish complete set of blue-printed working plans and type-written specifications for only $3.00 per set. When ordering, ask for Design No. A243L.



Floor Plan of Wisconsin Poultry House No. A243L

A little house like this will furnish warm, comfortable winter quarters for twenty or thirty hens. If the place is kept clean they will prefer to roost here, but they have to be trained in the fall. Laying hens have some sense which may be directed in the way of decency by commencing with them in the right way. It does not pay to keep the same hens more than two years, so half of the flock should be spring pullets. They are the pick of all the chickens. They are worth a little work in the fall to educate them to go to roost properly at night instead of mussing the seat of the family carriage.

Because the poultry house is small, it should not be neglected. Hens will not roost in a chicken house that is lousy. When they refuse to go in the house, it is a pretty good sign that something is wrong.

Pigeons

Every boy on the farm loves to have pigeons for pets. There is no objections to it, except where the roof water is used for domestic purposes. A flock of pigeons helps give a homelike and comfortable appearance to a barnyard in winter.

Hen House with Brooder Room—Design A243L

A mighty good hen house for farm conditions is illustrated in this plan. It has a concrete floor and removable nest boxes, roosts, etc. The nest boxes simply set on brackets and the roosts rest on ledges with supports 8 feet apart. The window openings are provided with sash, with hinges at the top, so they will open out at the bottom. Inside of the sash, the window openings are covered with thin 4-cent cotton to admit air and prevent drafts.

An interesting feature of this house is the brooding room. At brooding time loose boxes are set on the cement floor for the use of sitting hens. During the brooding season the door is shut between this room and the roosting room, so the brooding hens will not be disturbed by the laying hens. It is a good arrangement on a farm where a good many hens are kept and where an incubator is not desired. Some poultrymen, as well as women, have better success with hens when they can control them in this way. They visit the hens several times a day and encourage each one to keep close to her own nest. A little supervision at this time is necessary for real success.

Building Poultry Houses

There are a few general principles which apply to all poultry houses. In the first place, the location must be dry and it should be sheltered from the cold winds, not by placing the house at the foot of a hill, but by tree-belts, high tight board fences, or buildings. Cold air settles in low places. A low place, though sheltered from wind storms, is often more disagreeable to poultry than a bleak hill-top. Cold air slides down hill because it is heavier than warm air.

In regard to exposure, a south frontage is the best; next to south, front the house southeast or east. Chickens prefer morning sun to afternoon sun. They are early birds and want to see the first reflection of daylight.

Champion Plymouth Rock Cock

On general principles a convenient poultry house is to be desired, because it saves work at feeding time. On the other hand, the colony house plan saves work by giving the fowls an opportunity to feed themselves to a certain extent. It is easy to figure how many steps are saved in the course of a week or a year by having the fowls carefully houses all under one roof, but it is not so easy to estimate the amount of feed that poultry will pick up in an orchard, where the colony houses are separated by distances ranging from 20 feet to a hundred yards, according to circumstances.

It is plain that no one plan offers all the advantages and it is equally patent that no other plan embraces all the objectionable features.

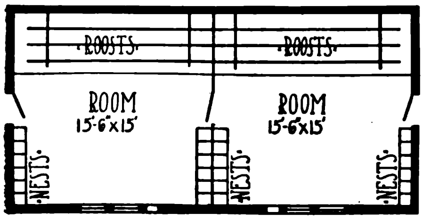
A building with a shed roof requires a little more material than a building the same size with a double roof, because the roofing material in both instances is practically the same and the drop in the double roof takes off just so much of the siding. To offset this, however, is the advantage of getting more sunshine into a house with a shed roof. To economize warmth in winter, it is a good plan to have the back of the house as low as possible. Some even build down to 3 feet. Unless the roof is quite steep, this manner of building leads to a good deal of stooping on the part of the attendant. If the roof is steep there is no material or space saved. Alley ways in poultry houses take up considerable room, but they also furnish storage for feed and implements.

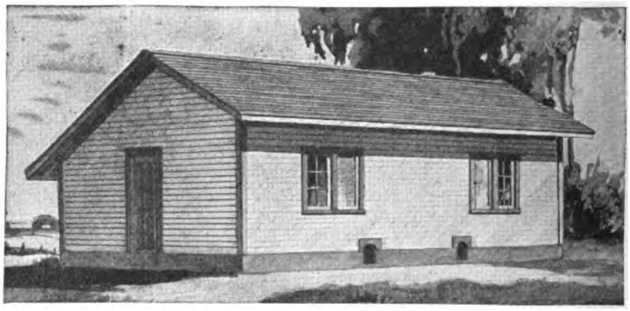
The subject of ventilation has bothered poultry men more than any other one thing. It is extremely difficult to get up a circulation of air in a poultry house and you cannot have ventilation without circulation. Some poultry men claim to have solved the problem by leaving out all ventilating shafts and covering the openings with comparatively thin cotton; others leave the gable windows open and fill the roof space with straw.

Sunlight is necessary to fowls. It prevents diseases, and encourages cheerfulness. Fowls basking in the sun usually are contented and happy, but fowls cannot stand too much sun in hot weather. There must be partial shade in summer.

A poultry house is not complete without a yard. Nine times out of ten the yard is too small, partly because large yards are not appreciated and partly because poultry fencing is expensive.

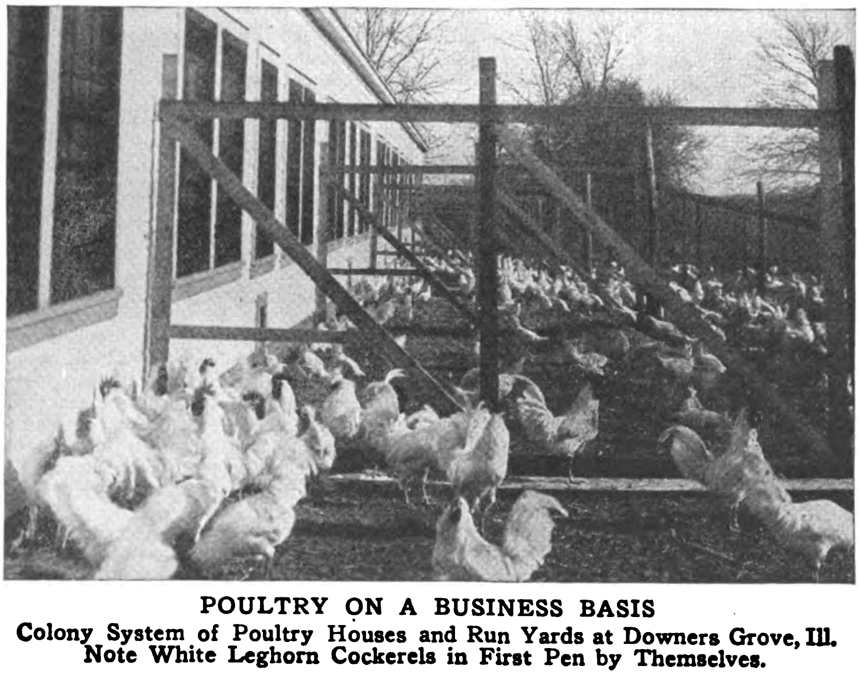
In these plans we are showing the different kinds of houses so that individual farmers may select a plan that just suits their location and the way in which they prefer to conduct the poultry branch of their business.





TWO-COLONY POULTRY HOUSE

A sensible poultry house that makes good appearance. Each room has one window glazed and one window covered with cheese cloth for ventilation. Dimensions, 16 by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A240L.



POULTRY ON A BUSINESS BASIS

Colony System of Poultry Houses and Run Yards at Downers Grove, Ill. Note White Leghorn Cockerels in First Pen by Themselves.

Plain Farm Hen Roost—Design A240L

A simple hen house for farm use is illustrated in this design. This little house is built in two compartments, divided by a board partition. The size of the house is 16x30, which gives two rooms each about 15 feet square.

In practice, it is found better not to have too many laying hens together in one room. Poultry men differ about the number, but the limit seems to be in the neighborhood of 40. Some poultry men draw the line at 25.

It is difficult to furnish dust baths and clean water sufficient for winter use when the poultry house is crowded. At the same time, there should be enough poultry together to warm the atmosphere. There is not much heat in their little bodies, but when 30 or 40 are housed together in a small, well-built compartment like one of these, the drinking water will seldom freeze.

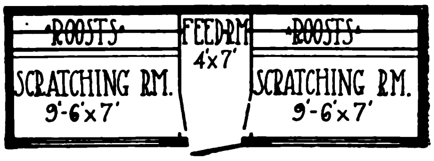
In this little poultry house all the furniture is supposed to be removable, so the house may be easily cleaned. The roosts, nests, dust boxes and other trappings may be carried out in the open. The cleaning of the house is very much less, and the job is likely to be much better done. A little attention to these matters makes the difference between having eggs in the winter time and going without eggs.

The manner of making the roof gives head room where it is needed, with the low part on the dark north side, in the roosting quarters, where head room is not necessary.

A small hen house built on this plan looks well and it may be constructed without very much expense.

Double Brooder and Chicken House—Design A202L

This design shows an economical brooder house. The house accommodates 130 or 140 chicks, taking them from the incubator and housing them until they go into the regular poultry quarters.



OPEN-FRONT POULTRY HOUSE

A shed roof building containing two units, separated by small feed-room. The front of the house is mostly window space—the upper part glazed, the lower part covered only with cheese cloth. Dimensions, 20 by 8 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A202L.

The compartments of this house are about ten feet long, seven feet wide, six feet high in front and four feet high at the back, which allows standing room for a short man in the front part of the house. It makes a house large enough for poultry to work in during bad weather, when the birds must be kept indoors, and there is room for the attendant to move about when caring for the brood.

The house is placed on shoes two by six inches, placed flatways and rounded like sled runners. These runners are ten feet long, which extends them a foot outside beyond each end of the building. An auger hole is bored through each end of each runner, so a chain may be attached for pulling the house to another place.

The floor is made in two thicknesses of ⅞-inch stuff, dressed one side, with roofing felt between, breaking joints to prevent breaking the felting. The walls and roof are covered with roofing felt. There is a window each side of the door, hinged at the top; and there is a wire screen on the inside of each window, also hinged at the top to swing in and fasten up against the wall with a button. Windows hinged in this way are liked by poultrymen generally better than sliding windows, for two reasons—they can be made longer, and when partly open will admit the fresh air and keep out the rain and snow.

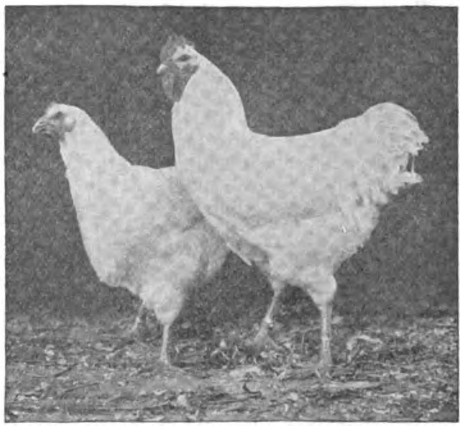
There are low temporary partitions inside to divide the building into two parts, and a brooder is placed in each compartment. The brooders are blocked up from the floor slightly and set a little away from the sides of the building, which is necessary to secure warmth and sufficient circulation. Inclines are used to make easy access to the brooders for the small chicks, but the inclines may be dispensed with later, as the chickens grow. In the warm season the windows are turned to the north and in cold weather to the south. By keeping the runners blocked up from the ground, a house built like this lasts a long time.

Small Double Poultry House —Design A151L

Here is a poultry house with an open scratching shed. The house is 34 feet long by 12 wide. Poultrymen differ about the width of a house constructed in this manner. Some prefer 12 feet because it is easier to get the sunlight clear to the back, as these houses should always front the south. On the other hand, men with considerable experience prefer houses 16 or even 20 feet in width, because they can house more fowls for practically the same amount of money.

There are many ways of building an open scratching shed and poultry house, but this plan seems to contain about everything that is necessary. The door opening into the henhouse is just a frame covered with cotton, which admits both light and air to the roosts and nest boxes. The outside wire netting may be covered with cotton, or not, according to the climate and the ideas of the owner.

The roofing is roll roofing and it starts at the highest point in front, turns over the corner at the back and goes clear down to the ground. This makes a thoroughly wind-proof and damp-proof house.

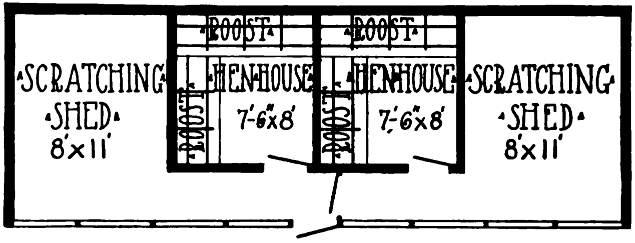


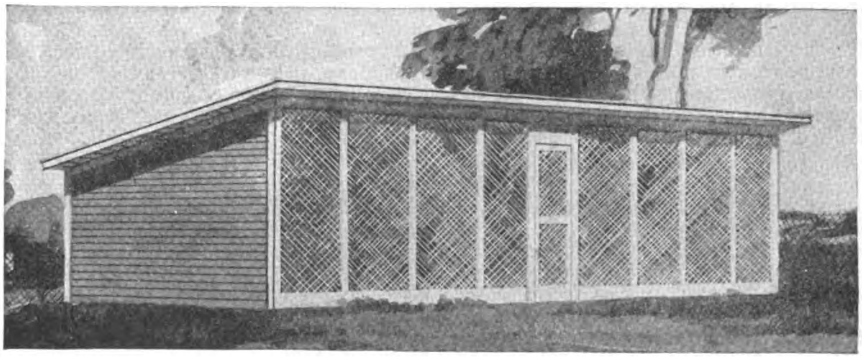
White Rock Cockerel and Pullet

It is a peculiar thing about dampness in poultry houses. It is a comparatively simple question that has bothered poultrymen more than anything else. Why a poultry house should gather dampness and have white frost on the inside when all the stables on the farm are comparatively dry has bothered a great many poultry raisers. It is easier to build a satisfactory stable for any other domestic animal than it is for chickens, unless we are satisfied with what is commonly termed a curtain-front house.

The phrase curtain-front simply means that some of the openings are covered with thin cotton instead of glass. It seems to have solved the problem of how to make a chicken house light, airy and dry, but not all curtain-front houses work alike. A great deal depends on the head room. A few hens have not body warmth enough to heat a great deal of space. You cannot have good ventilation without heat. The solution seems to be to build a comparatively small house with a low roof. Some poultrymen build their curtain-front houses as low as 2 feet at the back and only about 6 feet high in the front.

But this makes a back-aching job in taking care of the fowls unless the attendant is built on the "shorty" plan. Hens require little head room. Most poultry houses are built to accommodate the attendant to the detriment of the hens.





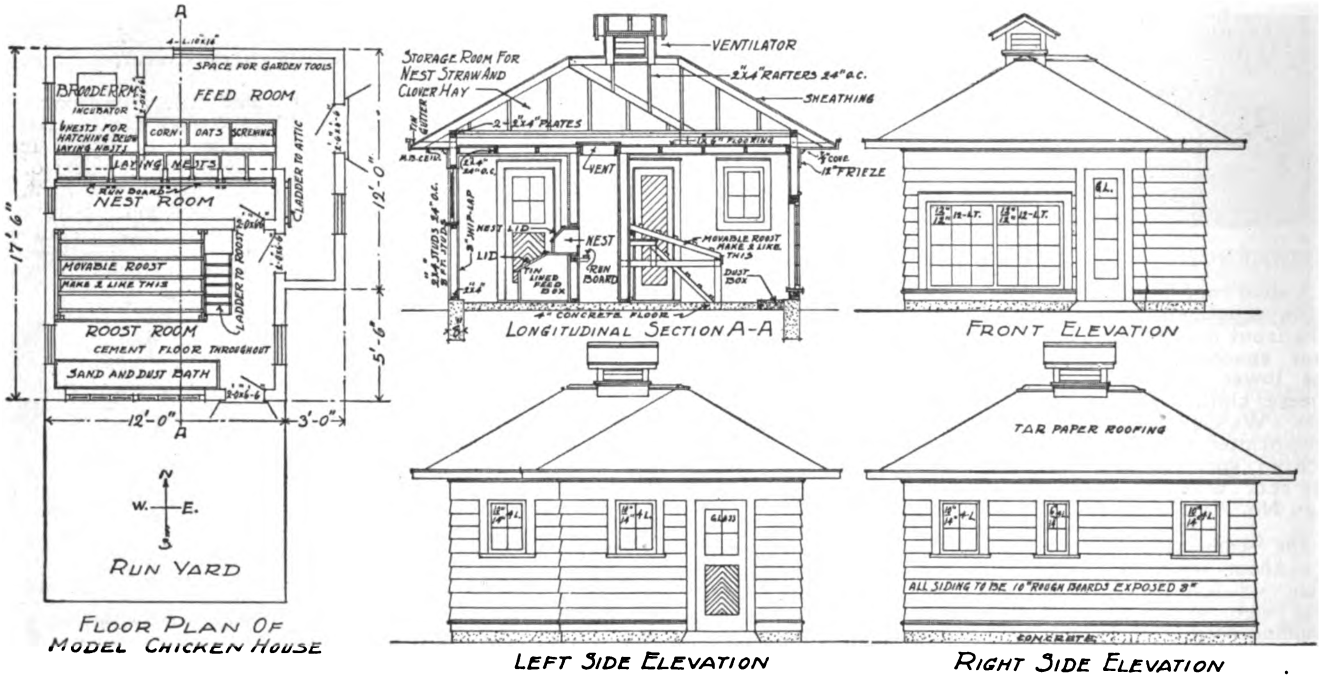
DOUBLE HEN HOUSE AND SCRATCHING SHED

An interesting poultry house design. Front composed entirely of wire netting. Outside dimensions, 34 by 12 feet. Inner building, or hen house proper, measures 15 by 8 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A151L.

Two Ornamental Chicken Houses

From the standpoint of the hen it makes very little difference how the poultry house looks so long as it is dry and warm and large enough. However, to put a measly looking hen coop or shed in the backyard of a nicely designed residence seems penny-wise economy.

When having a poultry house put up it doesn't cost much more to consider looks a little, and have it built with more of an architectural appearance than the ordinary amateur egg factory usually boasts of. All of the principles of scientific poultry house construction that years of experience have proven should and can be incorporated; and they should then be worked together into an attractive looking little building.



WORKING PLANS OF ORNAMENTAL POULTRY HOUSE

A poultry establishment carefully planned for village or suburban use, 15 by 17 feet 6 inches in size. Design No. A278L

The two designs presented herewith, Designs A278L and A279L, have been carefully worked out with this idea. The larger will accommodate a flock of from twenty to thirty hens, the smaller about half that number. A hip roof is used on each, surmounted by a ventilation cupola. This helps the appearance and, as ventilation is such an important thing in successful chicken raising, the expense is doubly justified.

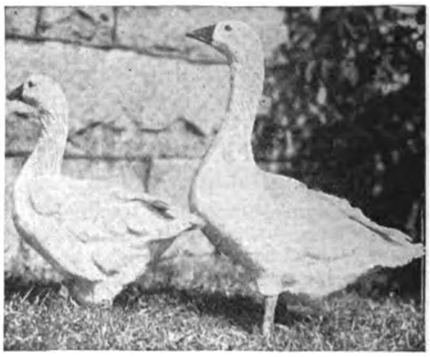
A study of the working plans, which are detailed very completely, will show the features of these two little home hen houses.

Locate the poultry house on dry, well drained ground. A damp location means a damp poultry house, and the result is that the fowls are affeced with many troublesome diseases.

Always face the house toward the south so as to get the sun's rays throughout the day in the winter to keep it bright inside. Let it be sheltered from the wind. Where it is necessary to build in a windy place, trees or small shrubs can be planted to shelter the house during the fall and spring when the winds are violent.

A poultry house usually needs more ventilation than is given. Fresh air is far more important than warmth. Fresh air means health, but it should never be supplied by a draft. The best system of ventilation for the ordinary poultry house is a cloth covered window, which allows the air to pass through slowly. Only in coldest weather, however, is the cloth pulled across the window. For the rest of the time it is left wide open. Where a house has its south side made up largely of a window group only about half of the spaces should be glazed and the other half left open and cloth screens supplied.

The poultry house floor is important. In many localities a sand or dirt floor is cheaper and is advisable. Hens like a dirt floor if it is dry. It makes a natural dust wallow, but must be replaced frequently in order to keep the house sanitary. A dirt floor must always be well above the outside grass so that water will not run in.

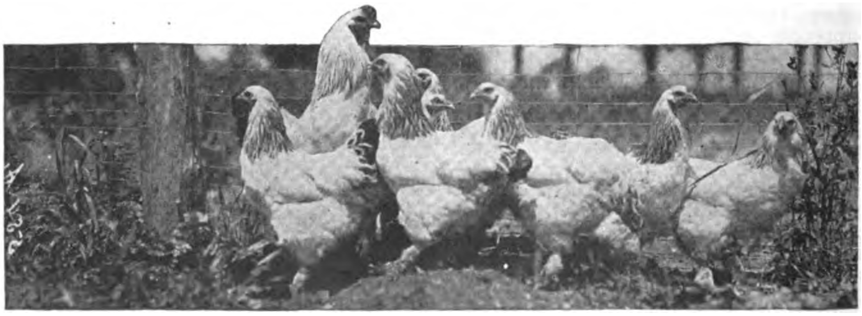


White Embden Geese

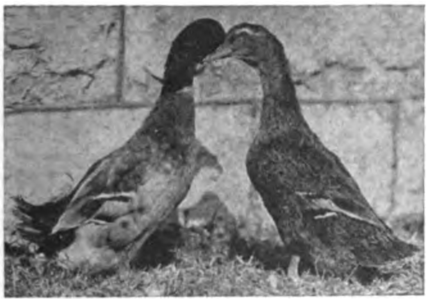
A cement floor is much easier to kept clean, it is durable and rat proof. Never leave a cement floor bare, but keep it covered with three inches of sand, and in the winter time, with from six to ten inches of straw.

The number of fowls to be kept will determine the size house to build. As a rule, however, fowls are too crowded to do well. Better allow too much floor space than too little. From five to ten square feet of floor space per hen is usually figured on.

The interior arrangement should be planned to make it easy to clean the house and care for the fowls. The perches should be in the warmest part of the pen as the chickens need more protection from the cold during the night, when they are inactive. The perches should be easily removed to make it easy to take them out to clean

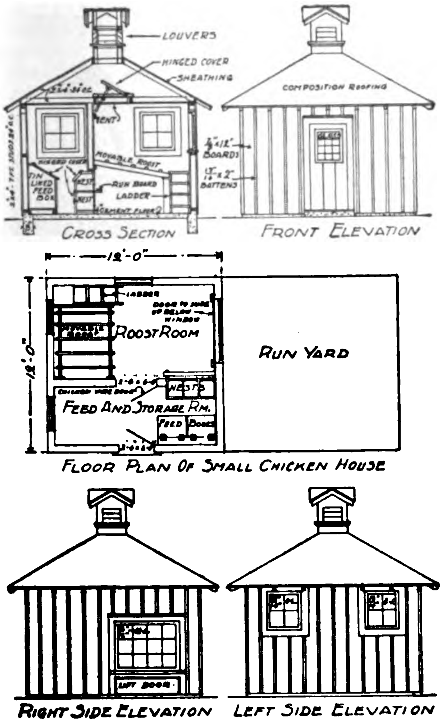


Flock of Light Brahmas



Rouen Ducks

them. As a general rule, small hens should have about six inches of perch space apiece, while larger hens should be allowed eight inches. Perches should be twelve inches apart and not closer than fifteen inches to the wall or ceiling.



SMALL ORNAMENTAL POULTRY HOUSE

Carefully arranged working plans for chicken house suitable for village or suburban back yard.. Design No. A279L.

The poultry house should be well supplied with nests which are easily accessible. In both of these designs the nests are in the partition between feed room and nest room, so that the eggs can be gathered without going in where the hens are, or distributing them.

Poultry Pointers

Hens need exercise.

Hens need sufficient sunlight.

Hens need a warm, comfortable home in the winter, but not too warm.

Overcrowding reduces profits.

Hens' teeth are scarce, so a substitute must be furnished in the form of grit.

Pure, clean water should be available at all times.

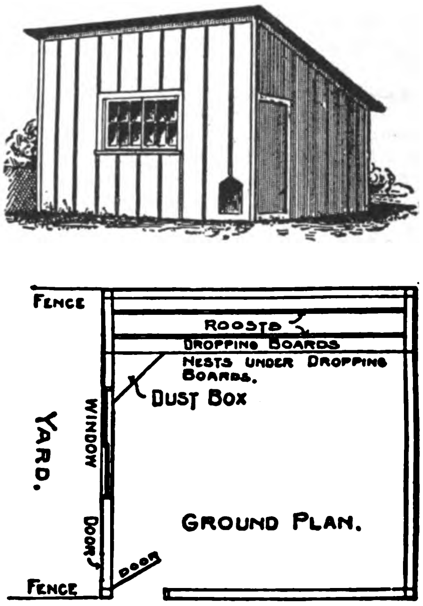
Keep a clean litter of chaff and straw on the floor.

Inexpensive Poultry House—Design A170L

This cheap little poultry house is 10 feet square on the ground, the front is 8 feet and the rear 5 feet high. Where only from ten to twelve hens are kept, this little house will be found very useful. The only openings are a door in the east side, the large window on the south side and the little door to permit poultry to pass in and out.

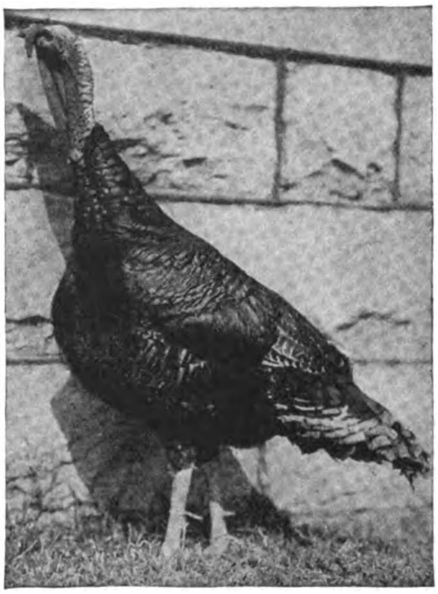
A little house like this can be built, if so desired, without so much as a frame, except 2x4's at the top and bottom to nail the boards to and another piece of 2x4 for the door and window frames. The window frame consists of a 2x4 at the bottom and another 2x4 at the top, spaced to hold the sash in such a way as to permit them to be moved back to leave the opening free. It is a good plan to have a wire netting over the window outside and muslin curtain inside. A curtain may roll up on a window shade roller, so that it may be pulled down over the opening on cold days and rolled up when the sun shines warm. Such a curtain should be thin enough to let the air through freely. It is a splendid ventilator for a poultry house, because it lets the air in and out gently without any draft. Some poultry houses are built without glass, thin muslin being depended on for both light and air. Such houses are usually dry, and it is well known that a poultry house must be dry or the fowls won't do well.

A poultry house like this must have a good floor. One of the greatest annoyances in poultry keeping is to have rats burrow underneath. Rats prefer a poultry house to any other building, because there is always feed around that they can get and there is always water. Rats like eggs, too, and they have been known to sample young chickens, but it is easy to block them out of a poultry house by making a concrete floor. Concrete for this purpose may be pretty much all sand and gravel. Most any kind of a composition will answer the purpose. A little lime and a little cement, or lime without cement, or cement without lime mixed up with water in most any proportion will do the business. It should be pounded in and come up about even with the sill.



INEXPENSIVE POULTRY HOUSE

Neat little shed roof coop 10 feet square on the ground. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design A170L.



Prize Bronze Turkey

Breeds of Poultry

PLYMOUTH ROCK. There are six varieties of Plymouth Rocks, as follows: Barred, White, Buff, Silver Penciled, Partridge, Columbian.

Standard weights are: Cock bird, 9½; hen, 7½; cockerel, 8; pullet, 6 pounds.

This is a general-purpose fowl of American origin. First exhibited in 1869 at Worcester, Mass. The most popular fowl in this country.

WYANDOTTE. There are eight varieties of Wyandottes, as follows: White, Silver, Golden, Black, Buff, Partridge, Silver Penciled, Columbian.

Standard weights are: Cock bird, 8½; hen, 6½; cockerel, 7½; pullet, 5½ pounds.

American origin, admitted to the American standard in 1883.

JAVA. There are two varieties of Java, as follows: Black, Mottled.

Standard weights are: Cock bird, 9½; hen, 7½; cockerel, 8; pullet, 6½ pounds.

The Java is a yellow-skinned fowl, single comb.

DOMINIQUE. There is but one variety of Dominiques, called Rose Comb.

Standard weights are: Cock bird, 7; hen, 5; cockerel, 6; pullet, 4 pounds.

The Dominique is mottled dark and light, but not black and white. Male birds are lighter in color than females.

BUCKEYE FOWLS. There is but one variety of the Buckeye, the Pea Comb.

Standard weights are: Cock bird, 9; hen, 6; cockerel, 8; pullet, 5 pounds.

The color of this breed is described as mahogany bay, with some fancy trimmings on the male bird.

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

Pekin Duck

RHODE ISLAND REDS. There are two varieties of Rhode Island Reds; Single Comb and Rose Comb.

Standard weights are: Cock bird, 8½; hen, 6½; cockerel, 7½; pullet, 5 pounds.

American fowl, originated from interbreeding Asiatic, Mediterranean and game breeds. The male and female are the same color, a rich red plumage.

BRAHMA. There are two varieties of the Brahmas, as follows: Light and Dark Brahmas.

Standard weights of Light Brahmas are: Cock bird, 12; hen, 9½; cockerel, 10; pullet, 8 pounds. The Dark Brahma is one pound lighter .

The Brahma is one of the Asiatic breeds.

COCHIN. There are four varieties of the Cochin, as follows: Buff, Partridge, White, Black.

Standard weights are: Cock bird, 11; hen, 9½; cockerel, 9; pullet, 7 pounds.

The cochin is an old Asiatic breed.

LANGSHAN. There are two varieties of the Langshans, as follows: Black and White Langshans.

Standard weights are: Cock bird, 9½; hen, 7½; cockerel, 8; pullet, 6½ pounds.

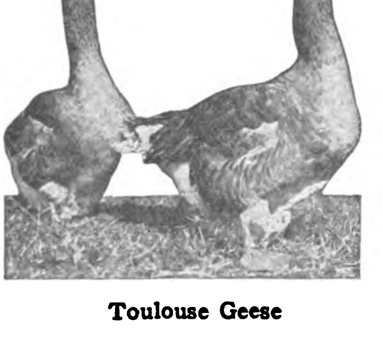
A tall, handsome bird of the Asiatic class.

MEDITERRANEAN FOWLS. Mediterranean fowls consist of the following breeds: Leghorn, Minorca, Spanish, Blue Andalusian and Ancona.

LEGHORN. There are eight varieties of the Leghorns, as follows: Single Comb Brown, Rose Comb Brown, Single Comb White, Rose White, Single Comb Buff, Rose Comb Buff, Single Comb Black, Silver.

The Leghorn is one of the smaller breeds, often called "the egg machine"

MINORCA. There are two varieties of the Minorca, as follows: Black and White Minorcas, and Single Comb Blacks.



Toulouse Geese

Standard weights are: Cock bird, 9; hen, 7½; cockerel, 7½; pullet 6½ pounds.

The Single Comb White and Rose Comb Black are one pound lighter.

BLACK SPANISH. There is one variety of the Spanish, called White Faced Black Spanish.

Standard weights are: Cock bird, 8; hen, 6½; cockerel, 6½; pullet, 5½ pounds.

The color is black, with white face and ear lobes.

BLUE ANDALUSIAN. There are three varieties of the Blue Andalusians, as follows: Red, White and Blue.

Standard weights are: Cock bird, 6; hen, 5; cockerel, 5; pullet, 4 pounds.

It is called the red, white and blue bird and is thought to be of Spanish origin.

ANCONA. Color, greenish black, with some white feather tips.

DORKING. Three varieties: White, Silver Gray and Colored.

Standard weights differ with the varieties, as follows:

White Dorking: Cock bird, 7½; hen, 6; cockerel, 6½; pullet, 6 pounds.

Silver Gray Dorkings: Cock bird, 8; hen, 6½; cockerel, 7; pullet, 5½ pounds.

Colored Dorkings: Cock bird, 9; hen, 7; cockerel, 8; pullet, 6 pounds.

Dorkings are distinguished by having five toes. The breed originated in England.

RED CAP. There is one variety of the Red Cap, Rose Comb.

Standard weights are: Cock bird, 7½; hen, 6; cockerel, 6; pullet, 5 pounds.

An old English breed, having a variety of red or reddish colors of the male. Female, modest browns, blues and black shading.

ORPINGTON. There are three varieties of Orpingtons, as follows: Buff, Black and White.

Standard weights are: Cock bird, 10; hen, 8; cockerel, 8½; pullet, 7 pounds.

English origin, large size, good winter layers.

POLISH. There are eight varieties of the Polish, as follows: White Crested Black, Bearded Golden, Bearded Silver, Bearded White, Buff Laced, Non-Bearded White, Non-Bearded Golden, Non-Bearded Silver.

Ornamental fowls, large headgear, very showy.

HAMBURGS. There are six varieties of the Hamburgs, as follows: Golden Spangled, Silver Spangled, Golden Penciled, Silver Penciled, White, Black.

Rather small in size. Considered an ornamental fowl, but will lay well. Called everlasting layers.

HOUDAN. There is one variety; glossy black feathers, tipped with white.

Standard weights are: Cock bird, 7½; hen, 6½; cockerel, 6½; pullet, 5½ pounds.

The Houdans are hooded fowls of pleasing appearance.

GAME. There are eight varieties, as follows: Black Crested Red, Brown Red, Golden Duckwing, Silver Duckwing, Birchen, Red Pyle, White, Black.

The same names are kept in game Bantams, which are bred to 18 to 22 ounces in weight.

CORNISH FOWLS FROM CORNWALL, ENGLAND. Standard weights are: Cock bird, 9; hen, 7; cockerel, 8; pullet, 6 pounds.

Very heavy legs and thighs, green-black in color.

Other Breeds of Fowls

Black Sumatra, Black Breasted Red Malays and about a dozen breeds of bantams.

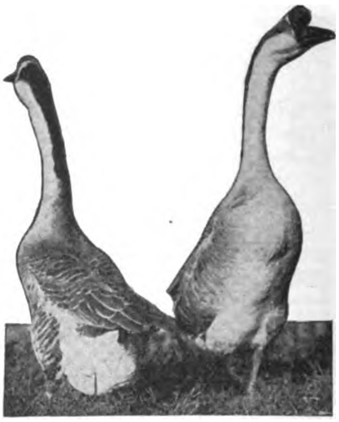
Bronze Turkey

Standard weights: Cock bird, 36; hen, 20 pounds.

The gobbler is somewhat darker in color of feathering than the hen bird. especially forward.

There are four other varieties of turkeys, as follows:

Narragansett, White Holland, Buff Bourbon Red.



Black Egyptian Geese

Toulouse Geese

Standard weights; Gander, 25; goose, 20 pounds.

There are five other kinds of geese, as follows:

African, Embden, Chinese (Brown and White varieties), Wild or Canadian, and Egyptian geese.

Ducks

There are eight or ten breeds of ducks, but the most common ones are the White Pekin, White Aylesbury, Colored Rouen, Black Cayuga, Muscovy and Blue Swedish. Of these varieties, the White Pekin seems to be the most popular in the market. It is the leading variety grown for profit.

White Pekins do not hatch their own eggs. They are good layers, hardy, easily raised, mature early and make a splendid fowl. The mature drake weighs 8 pounds, mature ducks 7 pounds.

Turkeys

Those who understand the breeding and care of turkeys generally make a success in a small way. All such side lines add to the interest of farm life; and turkeys add very much to the variety of the table in winter.

Turkeys are great fresh air cranks. The only difficulty in raising turkeys on a farm is to get them past the infant stage. The greatest danger to young turkeys is a cold, wet storm.

ORCHARD AND GARDEN

Cultivating Orchards

Orchard work must fit the climate. In some sections the rainfall is just about right, while in other places there is either too much or too little.

Clean cultivation often is recommended without any qualifications. But always some kind of cultivation is necessary during the weeks of early spring. A hillside orchard may need hand digging about the trees, to be followed with a good thick mulch, while an orchard on level ground may require clean cultivation the season through, and still another needs a cover crop after the middle of the summer.

Sometimes the cultivation should end with the planting of a cover crop about the first of August. The same orchard, in a droughty year, should have the soil stirred until the crop of apples is matured in the fall.

A drouth one year affects the trees the next year. By cultivating early and late, the moisture is held and the trees do not suffer. But if cultivation is stopped during a dry season the same time as when the season is wet, the trees may not have moisture enough to carry them through the winter.

When a tree mulch is maintained, the moisture problem is not worrisome, because the mulch will hold the moisture.

We want the wood to mature before cold weather, so it will winter without injury. For this reason, the general plan has been, in the humid regions, to cease cultivation in midsummer and to plant cow peas or some other kind of a cover crop.

The cover crop tends to evaporate moisture from the ground so the trees will stop growing and the new wood will have time to harden before winter. Late cultivation, with plenty of moisture, has a tendency to induce late growth, which will winter kill.

In the drier sections, or a droughty year in any section, winter killing is sometimes caused by the drying up of the small branches, which includes fruit spurs, leaving them without sufficient sap to perform the functions of growth the following spring.

Orchard cultivation is a very important part of fruit growing. It cannot be done successfully by rule of thumb or by following a recipe from some fruit grower's diary. An individual study of the soil and climate is the only introduction to successful orchard management.

Fruit tree sprays may be purchased at the local lumber yard. No fruit grower can afford to take chances. He must spray or get an inferior crop.

Don't try to raise melons and pumpkins as near neighbors.

The Farm Garden

The garden patch on the farm should furnish at least one-third of the living for the family. Ordinarily, however, farm gardens are sadly neglected. Work in the garden comes at a time when the farmers are extra busy in the fields, getting in their spring crops but that is no excuse for neglecting the garden; for there is more real value to the square yard in a good garden than any other part of the farm affords to the square rod.

One reason why farm gardens are so poor is the haphazard plot where the garden stuff is raised, and the lack of system in planting. A garden should be oblong, so that the cultivating may be done with a horse.

Every possible food-bearing perennial, indigenous to the climate should be planted and encouraged to do its best, because one planting does for a lifetime for some of them.

Rhubarb and asparagus, for instance, are two very valuable perennials that furnish the table with the much-needed freshness early in the spring when fruits and vegetables are scarce on every farm. After once planting, these old favorites will produce year after year for generations, with only a little attention at the right time.

There is also a long list of bush fruits, such as currants, gooseberries, several kinds and colors of raspberries, and blackberries that require very little attention after being planted in rows where a cultivator may travel between.

Then there are a great many kinds of fruit trees that belong in a good garden, dwarf pears and dwarf fruits of other kinds. Then the standard cherries, both sweet and sour, and early apples that ripen in June and later ones through the summer and fall—these all help to give the good housewife something that is fresh, nutritious and palatable every day in summer.

Strawberries are easily grown, if they are properly started and carefully managed. They make little trouble and turn off stacks of strawberry short-cake just when it is appreciated.

Then the garden should contain great quantities of vegetables and fruits for fall and winter use. There are many kids of roots that have a proper place in the garden that follow along in succession, and all this can be managed on a farm with very little real labor after the garden is once laid out and planted.

Grapes for summer and grapes for fall should string along the cultivated rows supported by posts and wires out of the way of the cultivator.

Keeping Apples

Apples for winter use may be seasoned in barrels in the barn.

One successful fruit grower in western New York cleans out the stalls in his extra cow barn in the summer time and has the place whitewashed. In October, when the Spys and Baldwins are fully ripe and beautifully colored by the light frosts and sunny afternoons, they are carefully hauled on a stone boat to the stable.

Straw is put in the stalls a foot deep and forked up against the partitions and mangers in hen nest fashion.

Into these nests the apples are piled, two or three feet deep, for the sweating process.

The stable doors are shut to keep the hens out, but the windows, which are covered with fly screen wire netting, are left open to admit air.

In a few days the apples become quite wet, and remain so for perhaps a week. The drying off process may take another week. The time depends upon the weather, to some extent. After the apples become dry, the "sweating" process is complete and they may be put in barrels or boxes and placed in a cool cellar for the winter.

Apples treated in this way keep better and have a better flavor than they do if picked from the trees and put at once into a cellar.

The dry airy atmosphere of the stable seems to complete the ripening process in a way that develops the finer qualities of the fruit in the natural way.

The best temperature for keeping apples throughout the winter is 33 degrees F.; but even temperatures can be maintained only in a cold storage warehouse.

A good cellar that is well ventilated at night in mild weather may be kept at a temperature below 40 degrees F. and that will prove very satisfactory if the air is kept dry and fresh. Ventilation may be made to take the place of ice or other kind of refrigeration, but the plan must be worked out before the cellar is built.

If double windows are needed, consult the lumber dealer. He carries sash in stock.

Three Crops from the Same Land at the Same Time

A combination of fruit trees and poultry and bees works fine. Chickens require partial shade and the trees do better when the birds destroy objectionable insects, while the bees help to fertilize the blossoms.

It will be necessary to fence the small fruits, such as strawberries and the low bush fruits. Flowers and vegetables do not require any attention from poultry. But trees that carry their fruits more than two feet up, feel much better for having the ground scratched fine about their roots. The scratching doesn't hurt currant bushes or berry bushes, but some hens have very liberal ideas in the amount of toll they demand.

No one can afford to waste time or nerve-force driving chickens away from the strawberries they have carefully tended all spring. It is curious how the plants escape the notice of all the old hens until the berries begin to turn red. Suddenly they discover that the strawberry patch is the only spot on the whole farm where their labors may be thoroughly appreciated.

This is no argument against running poultry in the orchard. But it emphasizes the importance of having a system. Fences are a part of every well-regulated farm system and they are just as necessary as potash or phosphoric acid.

Three crops may be grown upon the same land at the same time—fruit, bees and chickens.

Apples, plums, pears and cherries are the commonest tree fruits, but in some localities, where climatic and market conditions are right, special fruits are money-makers.

One reason why fruit trees make an ideal protection for poultry is the open method of pruning, which permits the sun to shine through.

Chickens enjoy the bright sunshine, but they want some protection; just the kind that fruit trees provide.

If given proper care, night and morning, the young hens will grow into layers of valuable eggs and lead lives of great usefulness, and the young males will soon fill the stew pans and stomachs of their owners; while the bees work for nothing and board themselves.

Dry weather is beneficial to poultry. That is one reason why chickens do so much better in summer. But they need shelter houses to protect them on rainy days. Hens are poor swimmers. A wet hen has always been considered a joke, a busy illustration of impotent rage. But a couple of hundred bedraggled specimens of carefully bred fowls is a sight not pleasing to the owner.

Intensive farming of this nature requires that the land between the trees shall produce crops to feed the bees and to furnish a good share of the summer rations for the poultry. Such crops set myriads of blossoms as they come along in succession to maturity near the hive. It is a great advantage to have a short haul. Profitable bee keeping requires a home-grown honey supply base. Bees should not be sent away long distances in search of blossoms.

Bees that have lived for several generations in a warm climate learn to take chances on finding a winter supply of honey provided by indulgent nature. But if the yearly calendar includes a few snow storms and some weeks of frosty nights, then honey bees keep a hustling all summer long.

In this kind of intensive farming, the plan is to make one branch of the business take care of another, while all crops are maturing to augment the general harvest.

There are many details to be studied and worked out, but they simply add to the pleasure of success.

Prices for all the building materials on a farm like this can be had from the local lumber dealer. He also has all the information necessary about the most suitable buildings.

GENERAL FARM SPRAYING CALENDAR.

By W. H. Doyle, Kansas Dept. of Agriculture, Topeka.

ORCHARD FRUIT—APPLE

TIME TO SPRAY	REMEDY	DISEASE OR INSECT
1. In spring before leaf buds open	Winter-strength lime-sulphur	San José and other scales; blister mite
2. When leaves begin to come out, but before blossoms open	Bordeaux 3-3-50, or summer-strength lime-sulphur Add 3 pounds of arsenate of lead to 50 gallons	Scab and leaf spot Curculio and various leaf-eating caterpillars
3. Immediately after blossoms have fallen, before calyx cups close	Summer-strength lime-sulphur Add 2½ pounds of arsenate of lead to 50 gallons	Scab, leaf spot, sooty fungus, plant lice Codling moth, curculio
4. Three weeks after blossoms have fallen	Same as No. 3	Same as No. 3
5. Eight or nine weeks after No. 4	Bordeaux 3-3-50 Add 2½ pounds of arsenate of lead to 50 gallons	Bitter rot, blotch, second spread of scab Fall caterpillars, second brood of codling moth
CHERRY		
1. Just before blossoms open	Bordeaux 3-3-50 or summer-strength lime-sulphur Add 2 pounds of arsenate of lead to 50 gallons	Fruit rot Curculio
2. As soon as blossoms fall	Self-boiled lime-sulphur Add 2 pounds of arsenate of lead to 50 gallons	Fruit rot Curculio
3. Two to three weeks after No. 2	Self-boiled lime-sulphur Ammoniacal copper carbonate	Fruit rot Leaf spot
4. After fruit is picked	Bordeaux 3-3-50 Add 2 pounds of arsenate of lead to 50 gallons	Leaf spot Slugs
PEACH, NECTARINE AND APRICOT		
1. Before leaf buds swell	Winter-strength lime-sulphur	San José scale, leaf curl, brown rot
2. When calyx tubes have fallen	Make milk of lime with 2 pounds lump lime to 50 gallons water. Add 2 pounds arsenate of lead	Curculio
3. Two weeks after calyx tubes have fallen	Self-boiled lime-sulphur and arsenate of lead mixed	Curculio, scab and brown rot
4. One month before fruit ripens	Self-boiled lime-sulphur	Scab and brown rot
PEAR		
Same as for apple	Use Bordeaux rather than summer-strength lime-sulphur	Fungous and insect troubles like those of the apple
PLUM		
1. In spring, before growth starts	Winter-strength lime-sulphur	San José scale
2. Just before blossoms open	Bordeaux 3-3-50 or summer-strength lime-sulphur on European or domestic varieties. Self-boiled lime-sulphur on Japanese varieties Add 2 pounds of arsenate of lead to 50 gallons	Brown rot Curculio
3. As soon as shucks fall, after blooming	Same as No. 2	Brown rot, leaf spot and curculio
4. Two to three weeks after No. 3	Same as No. 3	Same as No. 3
5. When fruit is ripening	Ammoniacal copper carbonate	Brown rot
QUINCE—Same as for Pear		
SMALL FRUITS—GRAPE		
1. As buds are swelling	Bordeaux and arsenate of lead mixed	Flea beetle and fungous diseases
2. When leaves are one-third grown	Bordeaux and arsenate of lead mixed. A fluid ounce of sirup added will help it to stick	Black rot, mildew, flea beetle. (Kerosene emulsion or tobacco concoction for leaf hopper)
3. Just before blossoms open	Repeat No. 2	
4. As blossoms are falling	Repeat No. 2	
5. Repeat No. 2 at intervals of about 2 weeks until fruit is half grown, then use	Ammoniacal copper carbonate	Black rot, and other fungous diseases
CURRANT AND GOOSEBERRY		
1. As buds are opening	Bordeaux and arsenate of lead mixed	Mildew and leaf-eating insects
2. Repeat No. 1 at intervals of from 10 to 14 days until fruit is half grown, then use	Ammoniacal copper carbonate for fungus and hellebore for leaf eaters	Leaf spot, mildew and imported currant worm
3. After fruit is picked and second brood currant worms appear or mildew persists	Bordeaux for fungus, arsenate of lead for worm. or mixed for both	Imported currant worm, mildew, and leaf spot

Spraying Calendar—Continued.

SMALL FRUITS (CONTINUED)—RASPBERRY, BLACKBERRY AND DEWBERRY

TIME TO SPRAY	REMEDY	DISEASE OR INSECT
1. Just before buds swell	Bordeaux	Anthracnose and sawfly
2. Ten days later	Bordeaux and arsenate of lead mixed	Anthracnose and sawfly
3. When fruit is half grown	Ammoniacal copper carbonate	Anthracnose
As soon as orange rust or yellows appears and sometimes in case of bad infection of anthracnose	Cut out and burn infected parts and if bad enough the whole plant	Orange rust or yellows, bad infection of anthracnose
STRAWBERRY		
1. When growth begins and again 10 days later	Bordeaux and arsenate of lead mixed	Rust or leaf spot and leaf roller
2. After picking fruit	Mow foliage and burn it and the mulching material on a windy day	All pests and diseases
3. On new growth after mowing, every 10 days to 2 weeks	Bordeaux and arsenate of lead mixed	Rust and leaf roller
4. Before setting plants	Do not plant in soil previously devoted to grass	White grub
VEGETABLES—BEAN		
When 2 or 3 inches high and at 10-day intervals until pods set	Bordeaux	Anthracnose
CABBAGE, CAULIFLOWER		
1. When worms first appear, but not after heading begins	Arsenate of lead. (After heading begins apply powdered hellebore)	Cabbage worm
2. When worms appear	Poisoned mash	Cutworms
3. When lice appear	Tobacco concoction or kerosene emulsion	Lice
CELERY		
1. As soon as plants become established, every 2 weeks until half grown	Bordeaux	Blight
2. When half grown and after	Ammoniacal copper carbonate	Blight
CUCUMBERS, MELONS, SQUASHES AND PUMPKINS		
1. Begin when plants are small and continue at intervals of 2 weeks	Weak Bordeaux: 2 ounces copper sulphate, 3 ounces lime to 3 gallons of water	Mildew and other fungi, and striped cucumber beetle. (Acts as repellent to latter)
2. As soon as beetle appears	Sprinkle with powdered tobacco or air-slaked lime, or better still place a frame covered with fine netting over the plants	Striped cucumber beetle
3. Carefully watch and as soon as lice appear	Tobacco concoction	Melon lice
PEA		
When worms appear	Poisoned bran mash	Cutworms
POTATO		
1. Before planting	Soak seed in formalin solution	Scab and dry rot
2. When plants are 6 inches high and at intervals of 10 days to 2 weeks, until growth stops	Strong Bordeaux with strong arsenate of lead mixed	Potato beetle and other insects, late and early blight
TOMATO		
1. Before plants are taken from seed bed	Bordeaux	Rot and blight
2. Five or 6 days after transplanting	Bordeaux	Rot and blight
3. Repeat No. 1 every 10 days or 2 weeks if necessary	Bordeaux	Rot and blight
4. When worms appear	Poisoned bran mash	Cutworms
FLOWERS—ASTER		
When plants are a few inches high and at intervals of 2 weeks	Ammoniacal copper carbonate, on the under surface of leaves	Leaf rust
CHRYSANTHEMUM		
Begin when small and every 10 days or 2 weeks after	Ammoniacal copper carbonate	Leaf spot
ROSE		
1. When bugs appear	Arsenate of lead, hellebore or hand pick	Rose chafer and slug
2. When bugs appear	Tobacco concoction or kerosene emulsion	Leaf hopper and lice
3. When they appear, or begin early and repeat at intervals of 10 days or 2 weeks	Ammoniacal copper carbonate	Black spot, leaf spot, mildew and other fungous diseases

Distances Apart to Place Fruit Trees

Different climates require different distances for fruit trees. In New England, Greening apple trees will live to be 100 years old. To look into the future, they should be planted 40 feet apart each way.

In the West, under irrigation, and especially in the hot, sunny valleys, apple trees are shorter lived, also they are differently pruned, so they may be planted closer together.

The following table gives the distances approximately:

Apple, 30 to 40 feet each way.
Pears, 20 to 30 feet.
Cherries, 20 to 25 feet.
Plums, peaches, apricots, 16 to 30 feet.
Currant and gooseberries, 3 to 4 feet.
Grape vines, 10 to 15 feet, according to variety and manner of trellising.

Cross-Pollenation of Apple Blossoms

It often happens that certain varieties of fruit trees fail to set fruit when the trees are full of blossoms. It is caused sometimes by rainy weather just at the critical time, but experiments show that a good many kinds of fruit are self-sterile.

Old experienced orchard men prefer to plant different kinds of apple trees near each other, not necessarily in the same row; but it is good practice to plant two rows of one variety and then two rows of another, and these rows should run crosswise to the direction of the prevailing winds. The strong winds usually come from the west or southwest, so the winds will carry the pollen from one variety across the space into the trees in the next row.

To assist nature in fertilizing the blossoms, a great many orchard men keep a number of stands of bees. It is good practice, but should not be depended upon to correct the mistake of solid planting of one variety.

Ask the lumberman about the new fruit tree sprays that have been invented during late years.

Hellebore for Currant Worms

It is easy to rid currant bushes and gooseberry bushes of worms that eat the leaves early in the season. These worms apparently hatch out all in one night. Thousands of them are busy eating the currant leaves and gooseberry leaves just as soon as daylight the next morning.

While the bushes are wet with dew, if they are sprinkled with Hellebore the worms will disappear as quickly as they came. If the bushes are dry, the Hellabore may be dissolved in a springling can full of water. An ounce of Hellebore is enough for a dozen bushes.

Bees on the Farm

The money value of honey is the least of the profits from keeping bees, where diversified farming is the main business. There are millions of flowers and blossoms that cannot fulfill their full mission in life without being thoroughly fertilized. Bees are the most reliable agents employed by nature to carry on this work.

The intrinsic value of honey as used on the farm table also is greater than its money value when sold as a farm product.

Bee keeping makes good employment for women, if they can overcome their natural fear of bee stings. There are netting protectors, but to be really successful, a person must not feel afraid. Bees seem to know timid persons, and are quite clever in taking advantage of them. A little firmness with bees is necessary, at times, the same as with other live stock. There is probably no more labor in the keeping of bees successfully, than is required to make a success of any other enterprise.

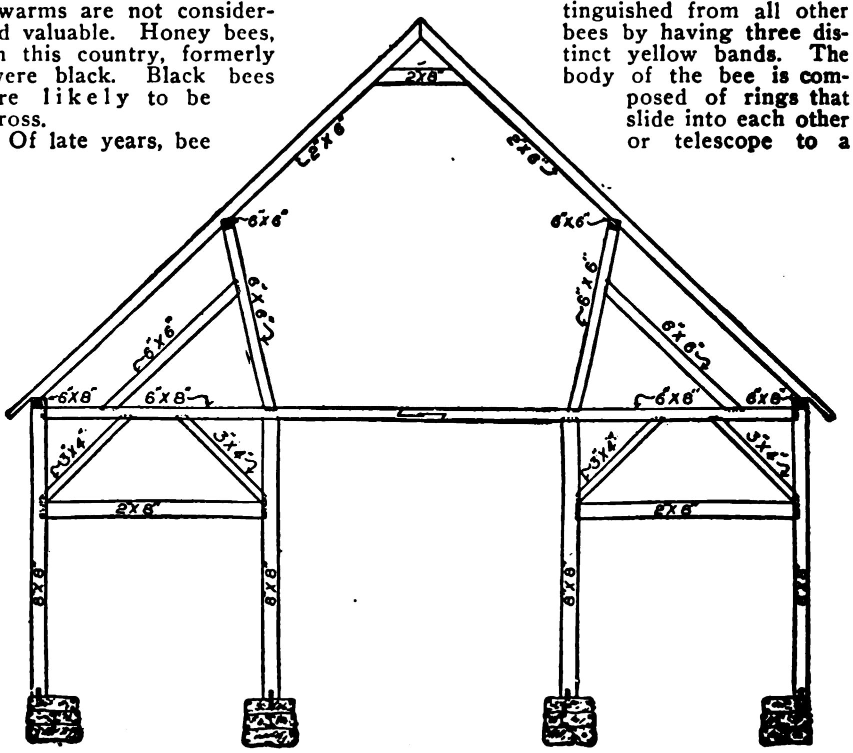
There are three kinds of bees in a hive, one queen, a number of drones and hundreds of workers. The queen is the largest; next in size are the drones, and the worker bees are the smallest. The cells, in which the eggs are laid to produce the different kinds of bees, vary in size according to the purpose required of them.

The queen is the "boss" of the whole colony. The queen lays all the eggs for the different kinds of bees, but the larvae in the cells are fed differently in the different sized cells.

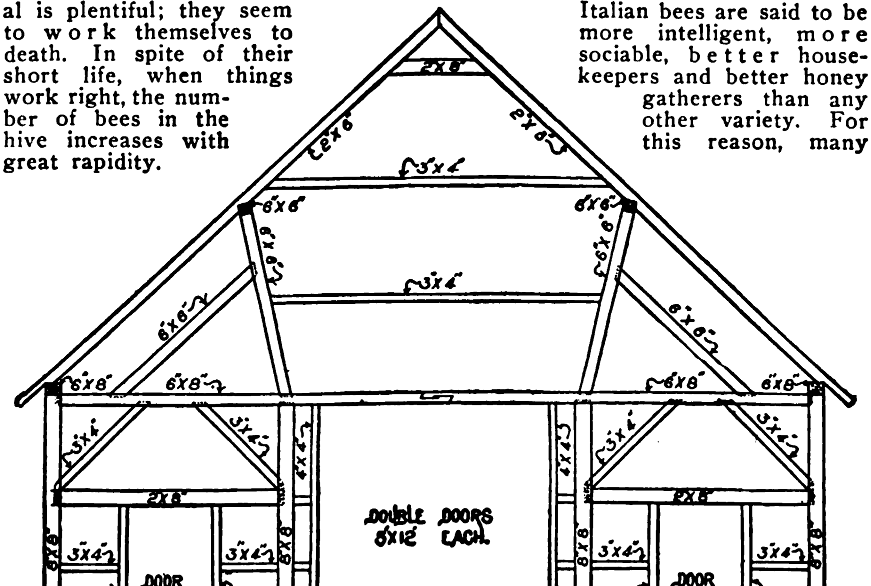
Drones, as the name indicates, are idlers. They are the male bees, and their only occupation in life is to fertilize the queen. The workers drive them out or kill them when the honey season is over.

Young bees, soon after being hatched, take care of the larva that is developing. It requires twenty-one days for the bee to develop from the egg and leave the cell. During part of this time, the larva must be fed. It is this nursing duty that the young bees are required to attend to. When young bees are hatched, they live on the honey in the uncapped cells for a few days until they are able to fly out.

Worker bees are short lived, especially when honey material is plentiful; they seem to work themselves to death. In spite of their short life, when things work right, the number of bees in the hive increases with great rapidity.



Construction of Center Bent of Barn No. A248L



Construction of End Bent of Barn No. A248L.

A bee man likes to get one early swarm and then let the bees spend the rest of their time gathering honey. For this reason he removes all the queen cells. Bees will not swarm without a queen to lead them. Late swarms are not considered valuable. Honey bees, in this country, formerly were black. Black bees are likely to be cross.

Of late years, bee men have experimented with bees from other countries for the purpose of finding a more satisfactory breed of bees. A great many different kinds have been tried out and bee men seem to have decided that Italian bees are the most satisfactory kind.

ITALIAN BEES. Italian bees are said to be more intelligent, more sociable, better housekeepers and better honey gatherers than any other variety. For this reason, many bee men have adopted Italian bees as their main dependence. The best bee men recommend the pure Italians. Like any other breed of live stock, the purer the breed the better.

Pure Italian worker bees are distinguished from all other bees by having **three distinct yellow bands. The** body of the **bee is composed of rings that** slide into **each other** or **telescope to a** certain extent. For this reason, the yellow bands are not always fully exposed, and this has led to some controversy. But a close examination will reveal this color as a characteristic distinct from the scheen or hairy color embellishment that sometimes rubs off by close contact with other bees in the hive, or dims with age.

Italian drones and queens may vary considerably in appearance, but the worker bees are constant in color. The young especially are beautiful in appearance.

GERMAN BEES. German bees are black, and somewhat inclined to dishonest methods. Unless carefully managed, they will rob neighboring hives. They are somewhat nervous or timid when the hive is opened. It is difficult to pick out the queen because of the peculiar action of the bees bunching together when disturbed. They are good workers when conditions suit them, and they make a very nice, white-looking honey-comb.

CARNIOLAN. The Carniolans are also black bees. They ahve been tried out in the United States for a good many years. They resemble the common black bee, but are somewhat larger and have a bluish cast about the abdomen and are embellished with fuzzy rings. Their characters are not definitely fixed. They have the reputation of swarming too often.

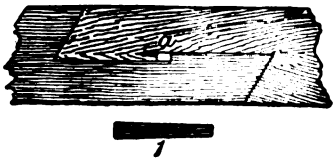
They are liked for one reason, they manufacture very little propolis, the extremely sticky glue that most bees use like cement.

CAUCASIAN BEES. Caucasian bees resemble the common black bees so closely that it is difficult to distinguish them. Caucasians, however, have the reputation of being the gentlest of all domesticated bees, also of being fair honey gatherers.

BANAT. The banat is another strain of black bees; they very much resemble the Caucasians.

TUNIS BEES. This is another race of black bees; also called Punice. They are ill-natured and are not considered suitable for the United States.

EGYPTIAN BEES. Egyptian bees are said to be the most beautiful of honey bees. It is a very old variety, having been propagated by the Egyptians for thousands of years. The Egyptian is a small bee, but very well liked. Some bee men report it as being cross or irritable, while other reports are favorable.



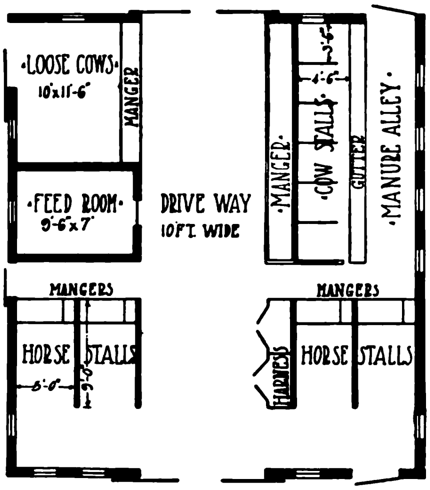
"Ship Carpenters' Splice" to be used as indicated in framing diagrams. 1 is a hard-wood peg to be driven into space indicated by "a." It is practically impossible for this splice to buckle.

ALBINO BEES. Albino bees are sometimes described as sports, or offshoots of Italian bees. The queens are noticeably yellow in color. They are not considered good workers, except in the hands of expert bee men.

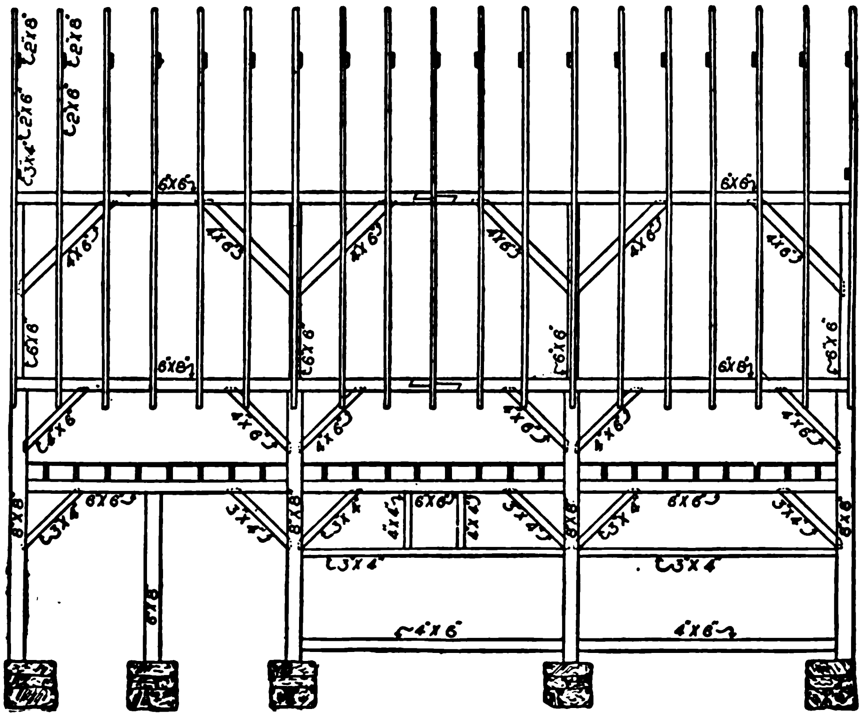
There are other kinds of bees in the far East, also in South American countries, some of which are stingless. Some varieties are very interesting, but so far are not considered practical under ordinary bee conditions in this country.

Five Hundred Dollar Barn —Design A248L

The frame of this barn is made of light timbers framed together in the usual way, as shown in the detail drawings. It is 34 by 40 feet, with 12-foot posts, making the distance 30 feet from the floor to the peak. Eight by eight-inch timbers are used for the main posts, and 5 by 6's for the purlin posts. The detail drawings show the manner of framing, and the perspective view shows the appearance of the barn when finished. The floor plan shows four stalls for horses and six stalls for cows, with a feed room 10 by 7 and a room for loose stock. This opens from the outside, a corner shed, with a feed rack that may be filled from the mow overhead.



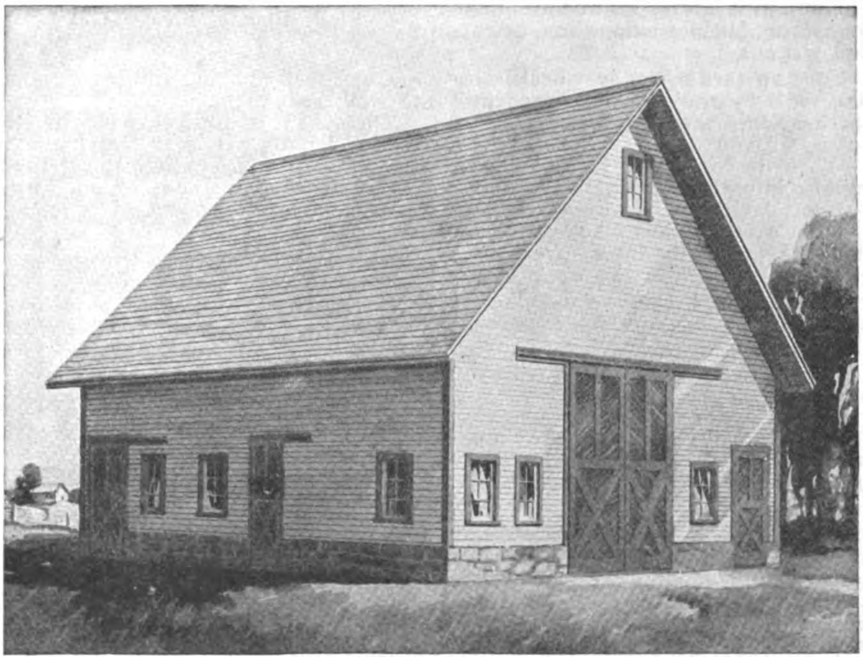
Floor Plan of Barn No. A248L



Side Elevation of Barn No. A248L, Showing Construction

There are many small farms where a barn like this will furnish all the barn accommodations needed—a farm that is managed by the owner, who does practically all his own work and who likes to keep three or four horses and a half dozen cows and heifers.

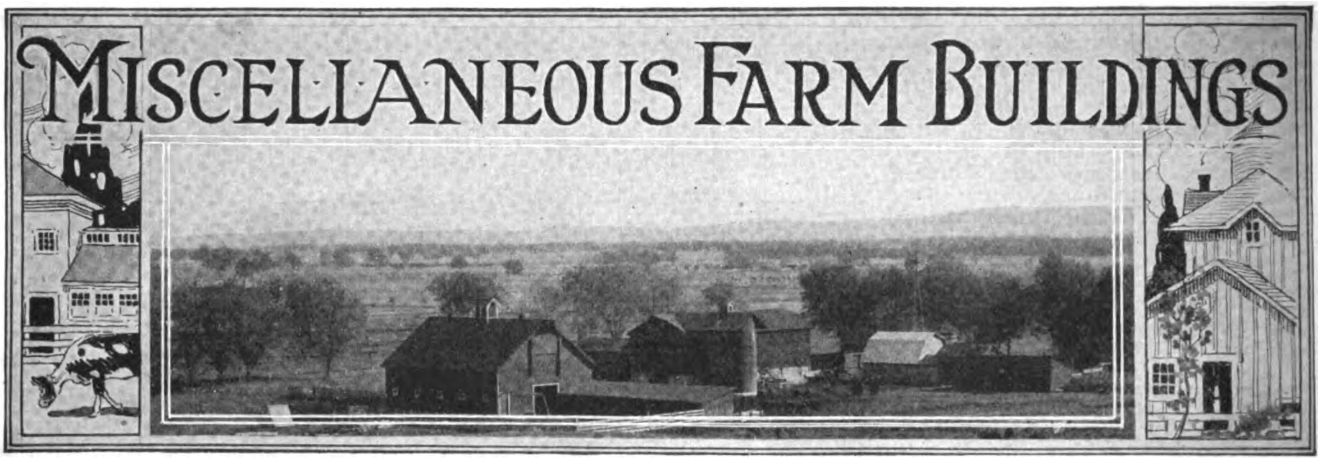
It is intended that the driveway through the center of the barn should be floored either with planks or cement, and the foundation of the barn should be either of stone or cement. A good deal depends on the supply of stone and sand, the cost of cement; also the character of men employed to do the work. Local conditions always affect the cost and manner of building. This accounts for the different kinds of buildings in different parts of the country. Everyone prefers a good, solid foundation and a good floor in a barn, that will not provide a harbor for rats and mice.



HEAVY TIMBER GENERAL BARN OF MODERATE SIZE

A popular gable roof barn to house four horses and six cows. Dimensions, 24 by 38 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00. When ordering, ask for Design No. A248L.

MISCELLANEOUS FARM BUILDINGS



Build a Snug Implement Shed

Implement sheds are cheap and necessary.

Farm machinery is necessary, but it is not cheap.

One thousand dollars worth of farm implements, with the best care, will depreciate about 10 per cent, which is $100 per year. The loss on some farms is twice this amount, because valuable implements are left out in the weather when they should be under cover.

Each farmer needs a building designed especially for the storage and the repair of farm implements and farm machinery, where each machine may be curried some time during the winter and treated to a bath of linseed oil mixed with genuine red or white lead. Raw oil is better than boiled, if given time to dry and soak in. A coat of pure raw linseed oil for the benefit of the wood, followed by a coat of paint for looks, is good treatment.

Poultry is interesting and profitable on a farm, but not among implements and wagons.

You can turn a wagon wheel into a hen roost by rolling it in. Frequently the hens turn the whole wagon into a roost, without turning a wheel.

When the hired man hitches up and climbs into the seat in the morning, before daylight, he expresses his opinion freely. Such language is not mailable under the new parcel post rules.

With a good enclosed implement shed handy, such accidents are not likely to happen.

Better adopt the safety-first plan, and build a cracker-jack of a machinery house with close-fitting doors.

It is a good way to fool the implement dealer. He expects you to buy new, instead of taking care of the old.

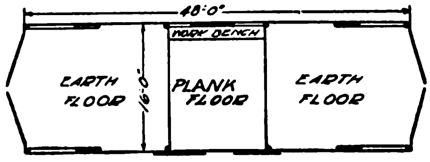
Uncle Si says: "Jim Smith has gotta buy a new binder. He ain't had tother mor'n about three year; let it set jus' whar he quit cuttin' every time 'n now she wont' work. Jus' got 'er paid fer las' fall, when he drawed off his grain, 'n now he's gotta start all over again. Agent was kinda sassy with him, too; said as how he'd earned the price of tother a runnin' after the money.

"I said to Jim, says I, 'Why, don't ye get a leetle jag o' lumber an' build ye a shed an' put yer binder an' yer drill an' yer mowin' machine an' sich truck under cover?' And what dye spose he sed?

"'Haint had time!'"

Wagon or Implement Shed—Design A232L

A style of implement shed is here shown which will meet the wishes of certain farmers. Sometimes it is desirable to build an implement shed with doors in the end. This arrangement gives access to the machinery in three ways. If only part of the space is needed for implements, then farm wagons may be backed into the shed, one at either end, and still leave room to walk past them.



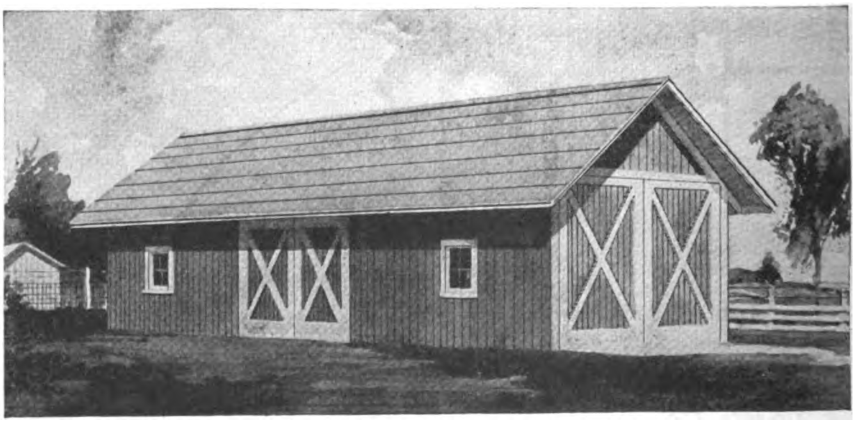
Floor Plan of Shed A232L

This shed is 16 feet wide by 48 feet in length. It is 10 feet high to the plates and 12 feet high to the tops of the doors at the ends. Some farm machines require a lot of room up end down. Sometimes you want to back a load of hay under cover. It is cheaper to raise the door lintel than to build the sides of the building two feet higher.

There must be some kind of a mechanical shop on the farm somewhere, and there is not a more suitable place for it than in the center of this implement shed. For this purpose, a double door is built in one side, about the middle; and for light, a window is placed on either side of this door and a large window in the center of the opposite side for a bench light.

A plank floor 12 feet wide is laid inside, in front of this big door, to work on. But it is not partitioned off from the other part of the building. A cement slab outside of the door would be of great convenience in muddy weather. It would also make a good standing floor for horses while getting their shoes pulled off or tightened up.

The end doors should be as wide as possible, so they are made the full width of the building. This construction prevents bracing, so the posts are all set three feet in the ground in concrete. The easiest way to do this is to line up the posts in the holes and chuck them around with good-sized stones to hold them steady, then make a thin grout mortar of Portland cement, sand and water, pour it in and churn it with a lath to settle it all around the large stones.



HANDY IMPLEMENT SHED AND SHOP

Shed 48 by 16 feet with double doors at each end, also on one side. Central section has plank floor and work bench, making an ideal shop. We can furnish complete set of blue-printed working plans and typewritten specifications for only $3.00. When ordering, ask for Design No. A232L.

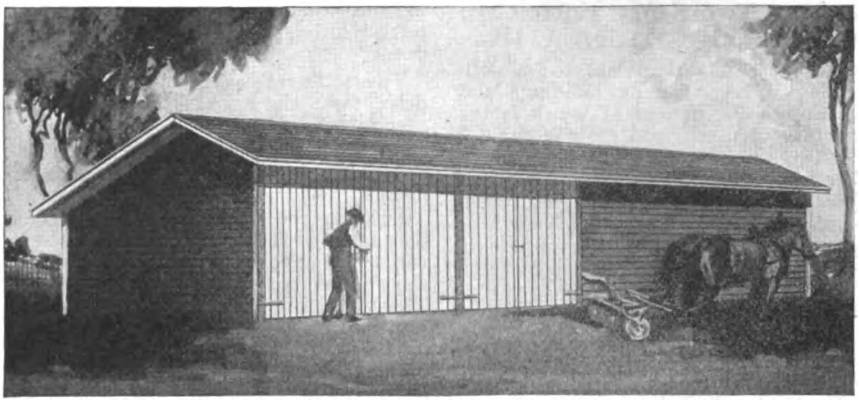
If care is taken to work the mortar all around the posts, they will be preserved from rotting. This makes a very solid building without bracing, except collar beams to tie the rafters together and girts between the posts to nail the outside boarding to.

Farm Machinery Shed—Design A260L

This design contains all the features of a farm implement shed built for convenience and service. Head room in the door-ways is obtained at considerable saving of material, by building the roof in the "double shed" style.

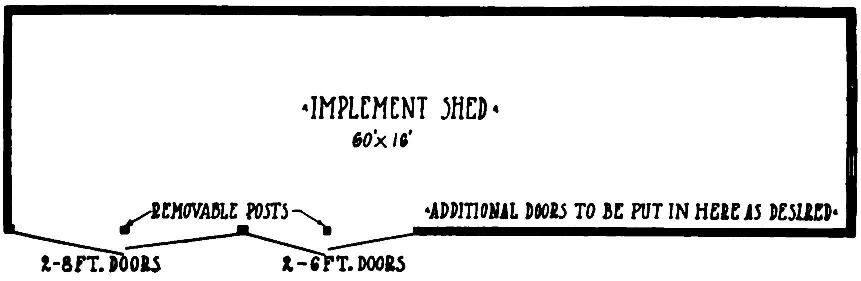
The doors are arranged in pairs. The first two doors are 8 feet wide each, giving an entrance 16 feet wide and nearly 10 feet high. The two doors next to these are 6 feet wide, making this entrance 12 feet in width.

There are two removable posts, one in either doorway. These posts may be short or they may reach to the door lintels. They are set in concrete sockets at the bottom. These holes are easily made. You simply reverse the old recipe for making doughnuts. Instead of taking a hole and putting a ring of dough around it you make a wooden collapsible core form, the size of the post one way and a little wider the other way. Dig a hole in the earth in the center of the doorway, 4 inches bigger all around than the collapsible core form. Place the form in this hole so the front side comes in line with the inside of the doors. Block the form in place with stones or wooden braces and work in cement mortar around it. When the concrete is sufficiently set, collapse the form and remove it from the hole.



LOW-COST FARM MACHINERY SHED

An implement house with double shed roof. Size 60 by 16 feet. Wide double doors along the front make it easy to get at any machine without moving the others. Additional doors can be put in along the front as desired. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A260L.



Ground Plan of Farm Machinery Shed No. A260L

The inside of the hole tapers back. When the post is placed in this concrete socket a wooden wedge is dropped in behind it to make it solid.

If the posts are made long, they will fasten at the top with hooks. If short, the wedge will hold them solid.

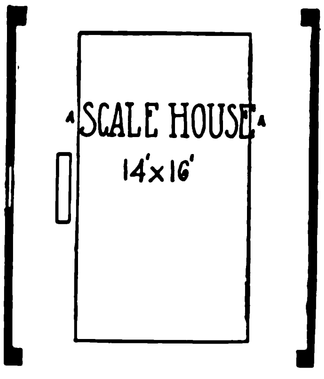
It is intended to store the smaller implements and tools in the far end of this shed and the heavy machinery in front of the doors. Additional doors can be put in any place along the front, just as the farmer wishes. The shed is 16 feet wide and 60 feet in length. The construction is 2 by 4 studding and rafters with 4 by 6 sills and 6 by 8 posts for the doors.

Any kind of a farm building should have good solid door posts. It is impossible to swing a good door permanently from a poor post.

Farm Scale and Scale House—Design A187L

The scale house, Design A187L, shows a four-ton scale with a platform 8 feet wide and 14 feet long. The building has a 14 by 16 foot base, with doors at each end 12 feet high to permit a load of hay to be driven onto the scales and weighed and driven off at the other end.

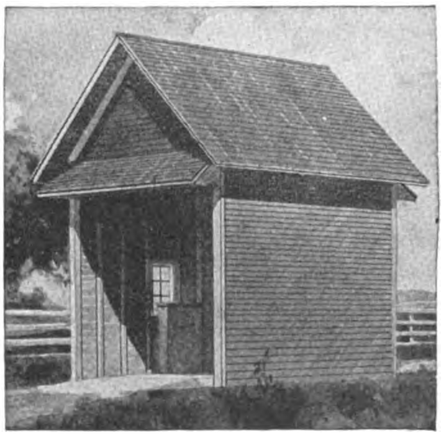
To make the scale available for weighing live stock, a heavy fence to hold the stock on the scale is needed. It should be made heavy with 4 by 4-inch corner posts, hooked together at the corners with heavy blacksmith made hooks. The fence is made of four panels to facilitate handling. The end panels have gates in them to let the stock in and out. These panels are well cross-braced and the gates are made heavy to stand the butt of a fractious bull or the crowding of steers. A scale like this is necessary on every large farm. Too much stuff is bought and sold by guess weight.



Ground Plan of Scale House A187L

In feeding stock for gains, it is a great satisfaction, as well as a direct benefit, to know what gains the stock are making, always with a view of changing the rations to produce quicker results. For this kind of weighing, the scale house should have a lane at one side, with pens for the control of animals that have been weighed, and other animals waiting to be weighed. These pens need not be large, but they should be conveniently arranged to get the stock in and out.

The exhaustion of some camparatively new soils in the corn belt, by the continuous cropping to corn, has reduced the corn yield from seventy bushels per acre down to twenty-five bushels, and in some cases even less. On the other hand, where scientific farm methods have been carried out, the original seventy bushel yield has been increased to eighty bushels and to ninety bushels, and in a great many instances to 100 bushels per acre.



SCALE HOUSE

A neat, inexpensive building that should be on every farm. Size, 14 by 16 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00. When ordering, ask for Design No. A187L.

Modern Two-Story Corn Crib and Granary—Design A344L.

The most important aid to modern farming is labor saving buildings and machinery,—the newest of which is the two-story corn crib and grain house.

A two-story farm grain house is a labor saving building.

Machinery in such a building takes the place of expensive hand labor. Machinery is cheap; but human muscle is the most expensive of all agricultural products.

To make a two-story corn crib that will fit the elevating machinery it is necessary to know:

That certain makes of elevators require a pit to hold the elevator boot.

That some elevators have folding boots.

That sufficient headroom in the driveway should be provided for the wagon jack that elevates the front end of the wagon.

That the cupola on the roof must be large enough to hold the elevator head and still have room to swing the swivel spouts.

There are two general groups of farm elevators, designated as *portable* and *stationary*.

Generally speaking, portable elevators work on an incline and push the grain or ears of corn through a trough or spout by means of sliding cross arms.

Stationary elevators operate with buckets in a vertical shaft. The buckets are filled at the boot bottom with a scooping motion and discharge at the top into a chute, as they are lifted and turned upside down by passing over a drum.

There are two kinds of power used to drive farm elevators, horse power and gasoline or oil engines.

A cubic foot of wheat weighs 49 pounds, corn 44, oats 28, and peas 50 pounds.

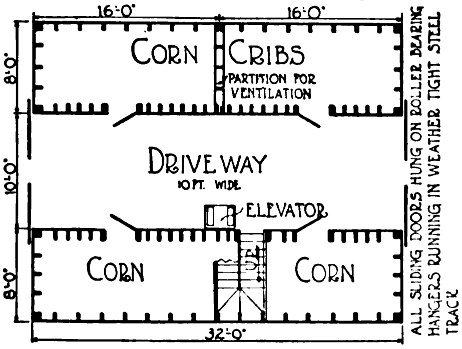
Figuring the weight of wheat, we find that a bin 10 feet deep filled with wheat will put a load of 490 pounds on each square foot of floor surface. If the alley way through the corn crib is 10 feet wide and the grain bins are the same size overhead, and the floor joists are placed a foot apart on centers, a full bin 10 feet deep will place a load of 4,900 pounds on each joist, which is approximately two and a half tons.

If the bin is made 20 feet deep, the load is doubled. These figures give a builder a clear idea of what is needed in the construction of a two-story grain house to carry the necessary load.

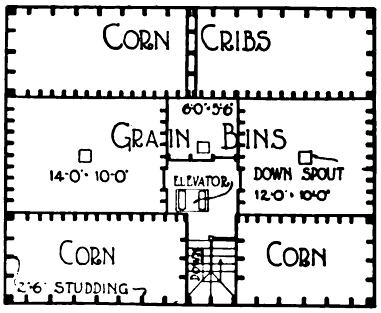
Corn Crib Ventilation

Taking one part of this country with another, it is not considered advisable to build a corn crib wider than 8 or 10 feet, because it is difficult to get air through between the ears of corn from one side of the crib to the other when the sides of the crib are more than 8 or 10 feet apart.

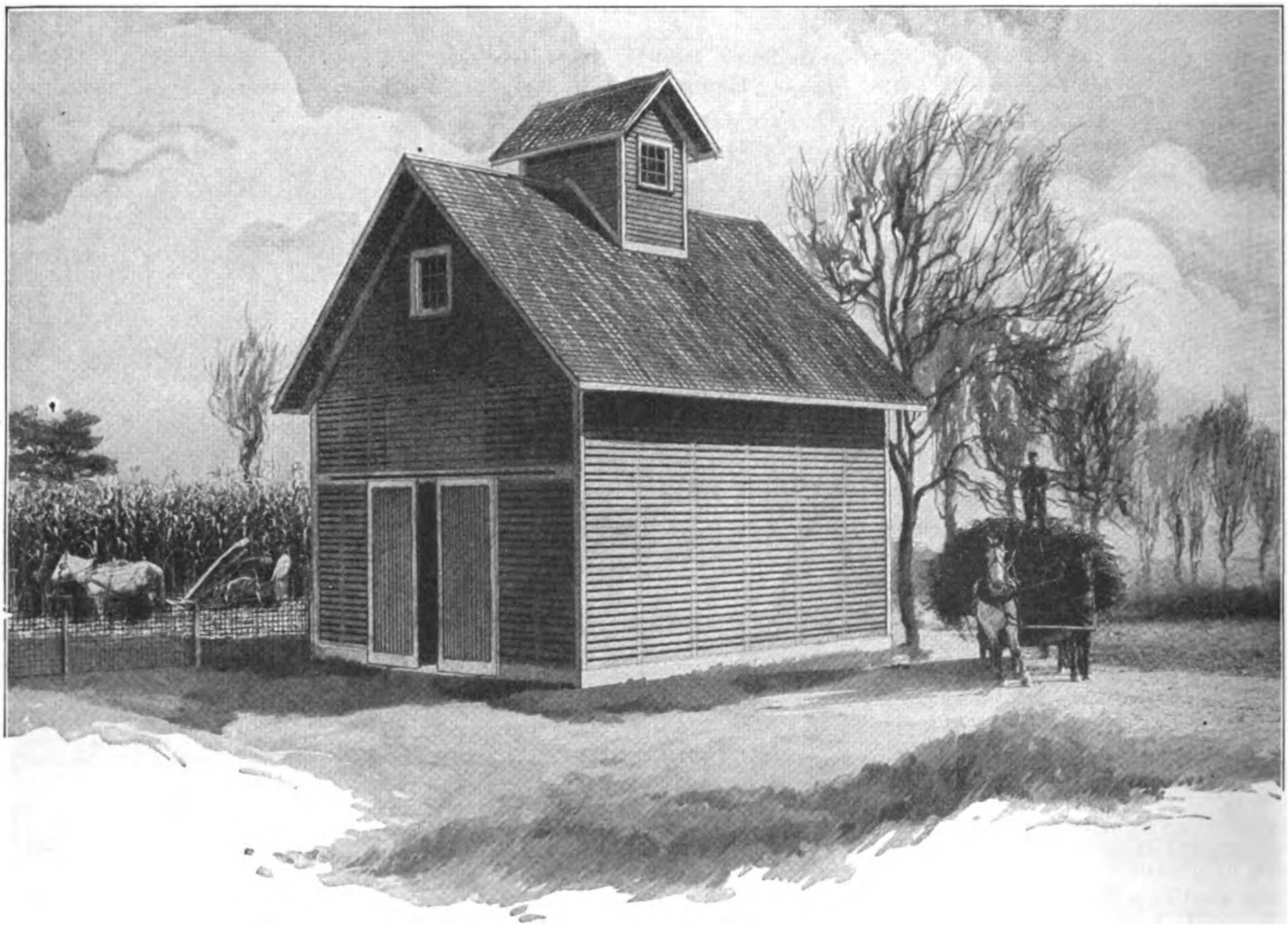
A corn crib looks better and protects the corn better when the sides are covered with slats. Corn cribs of this character are sometimes lined on the inside of the studding with corn wire mesh, which holds the corn away from the wooden slats and encourages a free circulation of air.


16'-0"
16'-0"
8'-0"
10'-0"
8'-0"
32'-0"
CORN CRIBS
PARTITION FOR VENTILATION
DRIVEWAY
10 FT. WIDE
ELEVATOR
CORN
CORN
ALL SLIDING DOORS HUNG ON ROLLER BEARING HANGERS RUNNING IN WEATHER TIGHT STEEL TRACK

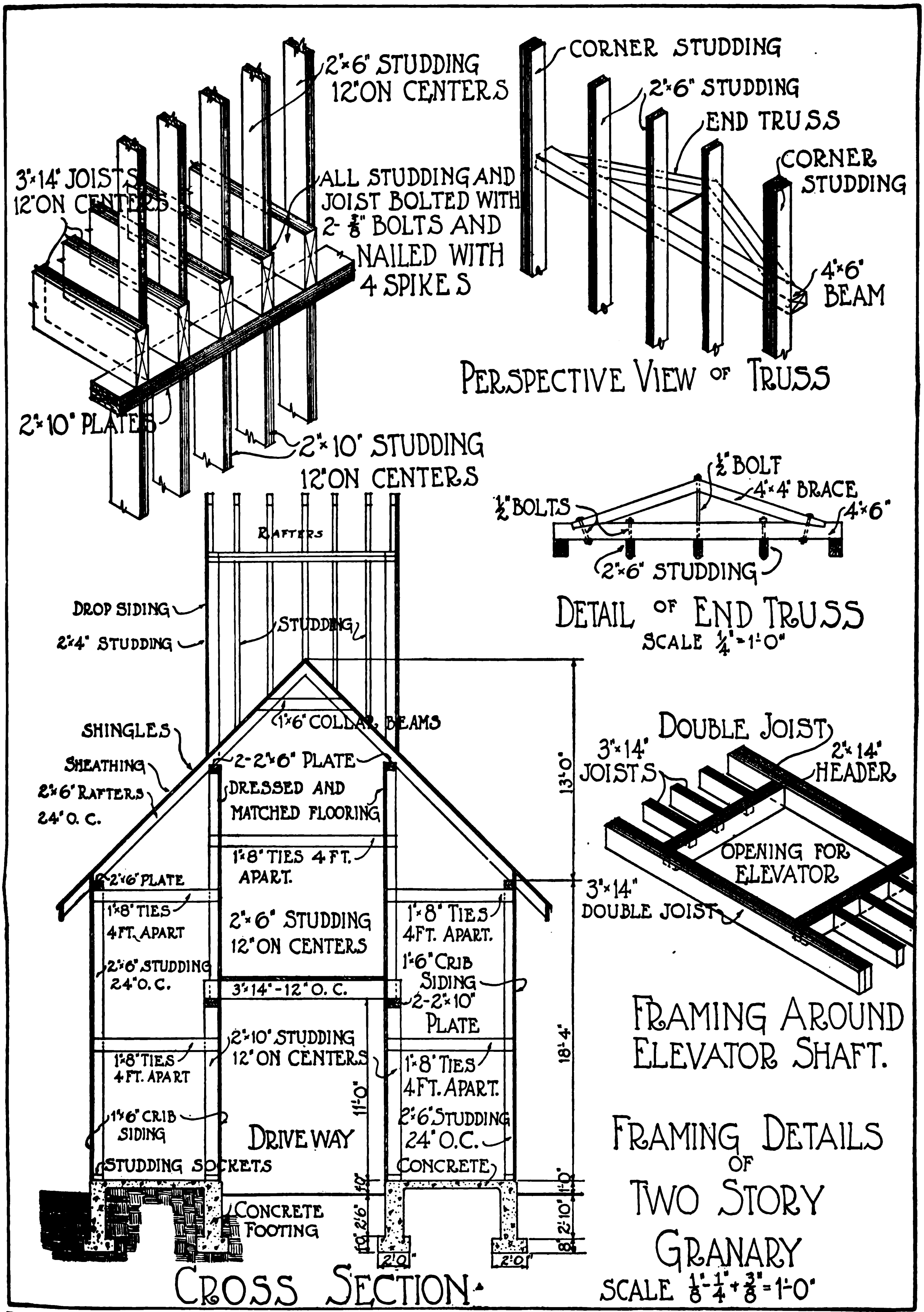
Ground Floor Contains Center Driveway and Two 8-Ft. Corn Cribs.



Upper Floor Has Corn Cribs on Outside and Grain Bins in Center.



A Model Two-Story Combined Corn Crib and Granary of the Type Favored by Progressive Farmers in Grain or Corn Raising Districts. We Can Furnish Complete Set of Blue Printed Working Plans and Typewritten Specifications for Only $5.00 Per Set. When Ordering Ask for Design No. A344L.



Details of Construction of Model Two-Story Combined Corn Crib and Granary (Design No. A344L) Illustrated on Page 98.

Keeping Ice for Summer Use

In the summer time, every farmer wants an ice house with plenty of ice in it, but conditions at that time of the year render the building and filling of an ice house exceedingly difficult. Then, when winter comes around, it is cold enough without it. So the seasons come and go and the farmer's hair turns gray before he gets around to it.

The fact is, an ice house may be built easily and quickly and without spending a great amount of money. Of course, a man wants a design to work from, so the building will have some style about it when finished. In planning a farm building, it is easy to lose sight of the fact that a well-built ice house will cost no more than a makeshift affair. Every well proportioned and properly constructed building adds a great deal to the value of the property.

Take one of these ice house plans to the lumber dealer and get his estimate of the amount of material required to construct it, and don't forget to tell him that you intend to paint it and that you want it to look right when it is finished.

Building Ice Houses and Storing Ice

It is easy to keep ice all summer, if you know how. When ice is stored away for summer use and leaks away before it is wanted, there is a reason for it. In the first place, there must be a sufficient quantity of ice together to keep cold, and there must be protection against warm air, and there must be no leak in the roof.

Some of the first farmer ice houses were built underground, or partly so. It often happened that drainage was imperfect and that water accumulated in and around the bottom of the house and melted the ice, so that by the middle of summer, sometimes even before the month of June, the ice would all be gone.

Years ago it was considered necessary to make very expensive walls to keep the ice from melting, and a great many experiments have been conducted for the purpose of finding out the best way to build ice houses. The right principle of refrigerator bulding has confused builders of ice houses, and some of them have not yet recognized the difference.

An ice house is intended to preserve ice, while a refrigerator is intended to make use of it, economically, of course, but when a piece of ice is put into a refrigerator it has a mission to perform. It is required to take the heat out of other material, to preserve food products, and it must dissipate itself in the process, while ice is placed in the ice house to stay, to be preserved until wanted for use.

An open shed will preserve ice, or it may be piled up in a field and kept all summer by simply putting a cover over it to keep off the rain, and an inner cover of sawdust to keep out the air. Such a crude way of keeping ice is necessarily wasteful, but not to the extent popularly supposed.

It is quite possible to put a cube of ice 12 feet in diameter in a cheaply constructed building and so pack it with sawdust as to keep it in a very satisfactory way until wanted during the summer months. The roof must be tight, because water dropping often in the same spot will bore a hole through the sawdust covering down to the ice; warm air will follow, and we all know that air must be kept away from ice or it will melt rapidly.

Drainage is another very important consideration. The bottom must be airtight, but it must be porous enough to allow water to percolate through. For this reason a bottom of rough stones covered with cinders and the cinders covered with a foot of sawdust makes a good bottom. A very satisfactory substitute is made by laying small, round poles in the bottom of the ice house, covered with straw and the straw covered with sawdust about a foot deep. It is impossible for the air to come up through a foot of wet sawdust in sufficient quantities to do much harm.

There is a good deal in packing the ice in the house to make it keep well. It should be put in during cold weather and all the chinks carefully filled with broken ice and the whole mass well frozen together by pouring on water. By doing this very carefully, the ice can be frozen together almost solid, so the air will all be forced out.

There should be a space of a foot between the ice and the sides of the house all around and this foot filled in with sawdust tamped down. The sawdust should be at least a foot deep on top of the ice; 18 inches is better.

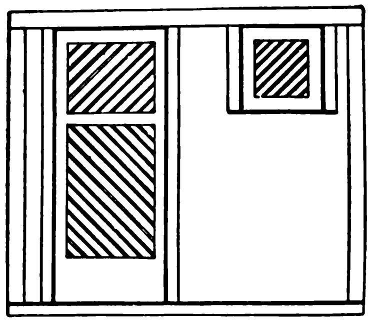
A great deal of ice is lost during the spring months, when the weather is getting warm, but not warm enough to require the use of ice in the refrigerator. During these weeks, the ice house is forgotten, and it melts a little and settles. The settling process opens cracks in the wet sawdust and some of these cracks will extend through to the ice. After the house is filled and covered with sawdust it should have attention at least once a week. If the sawdust is kept packed down well all around and on top, the ice cannot melt very much.

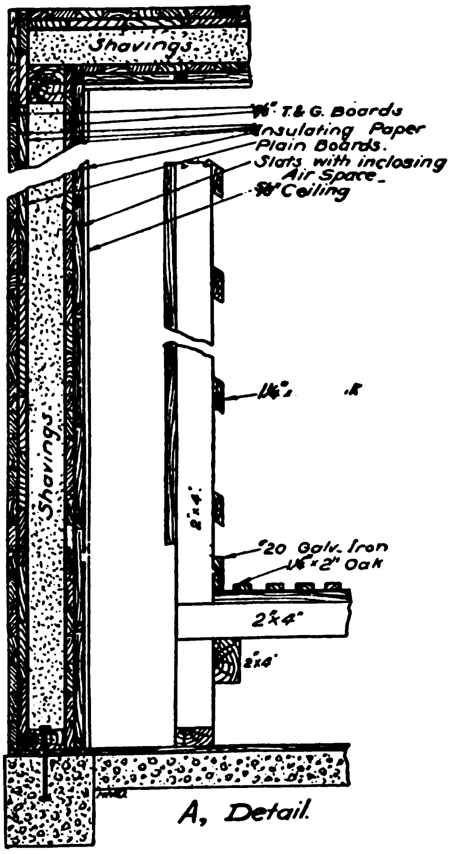
There are other details to think about, such as ventilation and shade. It is a great help to have the house shaded by a large tree or another building. When the sun beats down hot on top of the roof, the temperature inside the building is a great deal higher than it would be with the roof shaded. If shade cannot be had, a small opening in each gable will induce a current of air and help materially.

In choosing the location, convenience in using the ice should be considered in preference to convenience in filling the ice house, because the filling is done in a day or two, whereas the unloading process occupies several months and requires innumerable trips between the kitchen or dairy and the ice house.

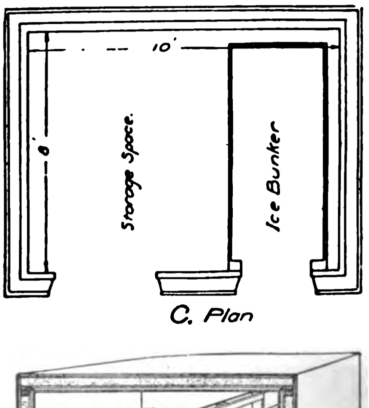
Dairy Refrigerator Plan

The details show the plan for building a refrigerator 8 feet by 10 feet inside. The best place to build it is on one side of the dairy room, leaving space to walk and clean all around it.

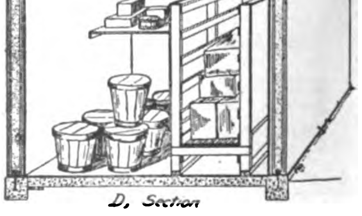

B, Elevation



A, Detail



C, Plan


D, Section

Diagrams showing cross-section and details of construction of a farm refrigerator: A, Detail of wall construction and ice bunker; B, front elevation; C, floor plan; D, sectional view.

The floor is made of good concrete, which projects an inch or two outside of the wooden frame of the refrigerator. In this concrete is imbedded a strip 1 inch thick and 4 inches wide, on which to start the framework. Bolts are set upright in the concrete which project through this inch strip and through the 2x4 sill as shown in the "A" detail.

A framework of 2x4's is then constructed, leaving two door openings, one of which is 2 feet 10 inches in the clear for constant use, and the other is narrower and shorter, for putting in ice twice a week, as shown in figures B, C and D.

Tongue-and-groove boarding is nailed on the studding and the space is filled with shavings as the boards are put on; the shavings being tamped to pack them. This construction is the same on all sides and the top. Outside of this one course of boards is a covering of insulating paper, carefully put on to avoid leaving openings to admit air. Outside of the paper is nailed another boarding of narrow matched stuff. Over this insulating paper is nailed ⅞-inch strips to form an air space before putting on the last layer of paper and the ⅝-inch ceiling. The doors must be very carefully made to make them air tight. In fact, the whole refrigerator calls for the very best material and the best workmanship. A carpenter must be employed for this job who knows how to make a tight joint, and he must thoroughly appreciate the importance of applying his knowledge to every square inch of the work.

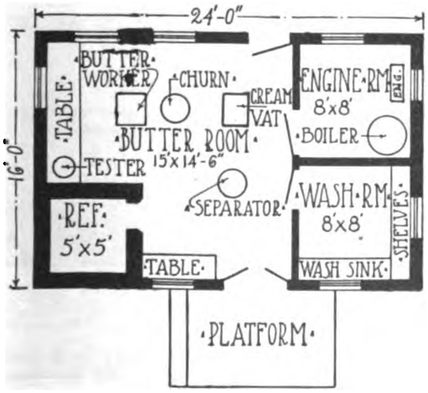
Such a refrigerator on the farm will be a great comfort if it is properly constructed. It will solve the problem of how to keep butter, lard, eggs and fresh meat during the hot weather. It may be made to pay for itself by selling fresh meat to the neighbors in hot weather, and if a farmer is commercially inclined, he can buy eggs while they are cheap and hold them in his cold storage refrigerator until fall and get a good price.

Farm Creamery—Design A237L

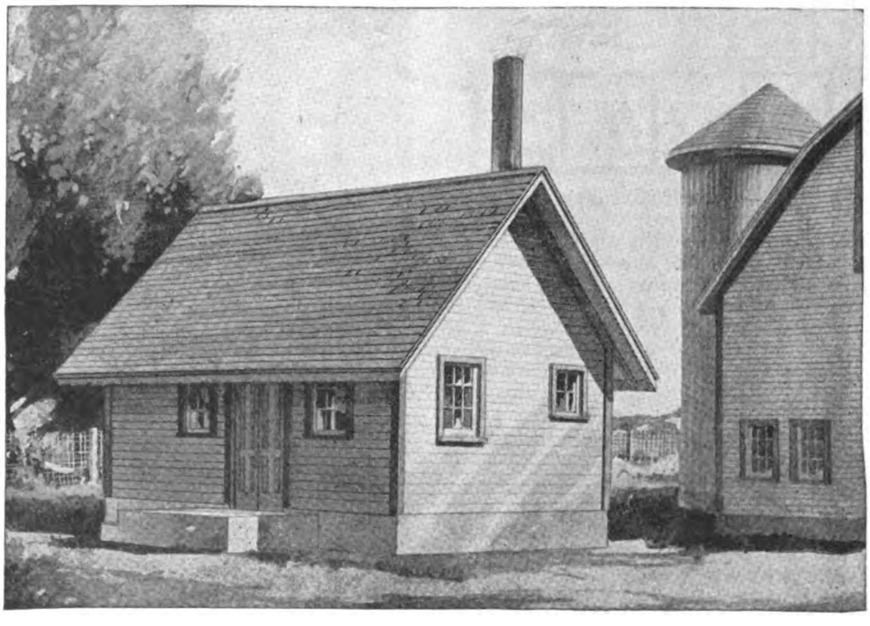
Where a good many cows are kept and butter is manufactured on the farm a good dairy house is absolutely necessary. The size of the dairy farm and the expense of building a house for the machinery and general equipment must, of course, fit the size of the business. In some sections of the country farmers prefer to work up the milk on the farm rather than to send it away. For making either butter or cheese, a steam boiler is one of the first essentials. Nothing does the heating so well as live steam. Nothing else will cleanse milk cans and other utensils like steam. Some kind of power is necessary to drive the churn and to do the pumping. This power may as well be steam power as anything else, especially when steam is needed for heating and washing purposes.

The building may not be expensive, but it should have a cement floor with carefully constructed drainage. The waste from making butter or cheese is not pleasant after it has lain around the premises for a while. One of the greatest profits in working up milk at home is the feeding of skimmed milk while it is warm from the separator. When cheese is made, the whey is not a valuable food product. It is worth a little something, however, in connection with pasture and grain.

The arrangement given in the plan makes a handy little butter factory for the farm where from fifteen to twenty-five cows are kept. The cows and calves raised on the by-products from making butter, and the value of the fertility which in this kind of farming is kept at home, constitute the greatest profits—profits that will be appreciated more as soil fertility become more exhausted and better farming methods are more generally understood.

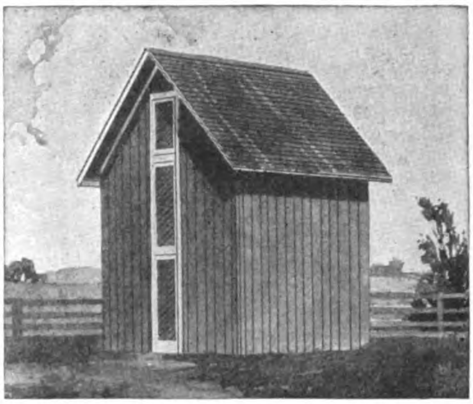


Floor Plan of Creamery A237L



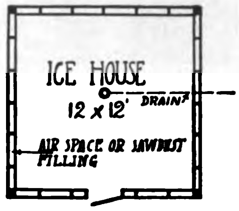
FARM CREAMERY AND BUTTER FACTORY

One-story frame building 24 by 16 feet, containing butter room, refrigerator, wash room and engine room; all arranged most conveniently. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A237L.



SMALL FARM ICE HOUSE

Building 12 feet square on the ground; has insulated walls and regulation ice house doors. We can furnish complete set of blue-printed working plans and typewritten specifications for only $2.00 per set. When ordering, ask for Design No. A137L.



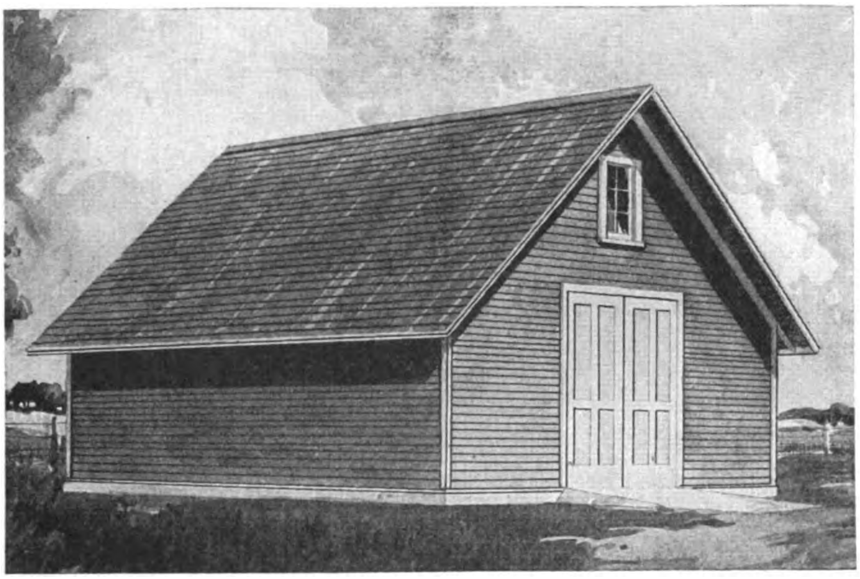
Floor Plan of Ice House A137L

Cheap Ice House—Design A137L

About the cheapest way of building an ice house that looks all right is shown in plan A137L. It is 12 feet square on the ground and 12 feet high to the eaves and the roof is steep enough to give head room for packing the ice clear up to the plate or above.

The house will hold a cube of ice 10 feet thick and leave room for a foot of sawdust all around. There are three hinged doors in front and inside of the doors are loose boards to hold the sawdust in place. These boards may be taken out one at a time as the ice is used.

Potatoes in the Middle West, taking ten years together, yield an average of a little less than ninety bushels per acre.

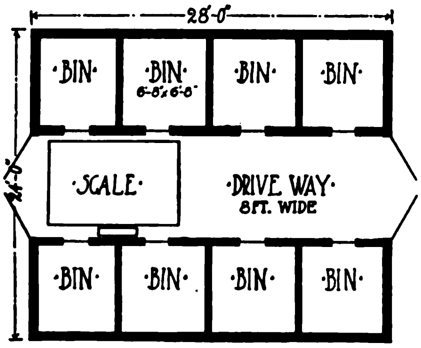


GRANARY AND SCALE HOUSE

Snug and trim building containing eight bins, 6 feet 8 inches square, besides center driveway, 8 feet wide, where is placed a large platform scale. Size of building, 28 by 24 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. When ordering, ask for Design No. A141L.

Rat Proof Granary—Design A141L

Next to a chicken house, a granary offers the greatest inducement for rats. A dry floor and one that is rat-proof may be made by excavating for the foundation about 6 inches deep. Then pound in about 3 or 4 inches of cinders and lay the sills and joists on the cinders and fill in the spaces between the joists with concrete. In framing the joists, built a pit for the scales just deep enough to let them in flush with the floor. If you don't know the exact depth, make the pit a little deeper than necessary, because the scales may be easily blocked up. At the edges around the sills and outside of the cinders let the concrete project down and outward about a foot all around.



Floor Plan of Granary A141L

Concrete for this purpose may be made with very little cement, say, one part cement, four parts sand and five parts gravel or broken stone pounded down so that no stones project above the joists. Strike it off level with a straight-edge. Do this work about a week before the sides of the building are put up; and sprinkle the concrete every day, so it will set properly.

The studding is then set up in the usual way and matched boarding put on the outside of the building, and the boarding covered with siding in the usual way. This construction leaves the studding exposed on the inside of the bins, so that a dog or cat can easily reach rats or mice that find their way inside. Hollow walls make harbors for vermin, but this construction leaves them no protection. There is a window in the back end of the alley, and another one over the door in front. The doors are made heavy and swing out. They close against heavy jambs, so that rats and mice have very little encouragement to eat their way in around the door.

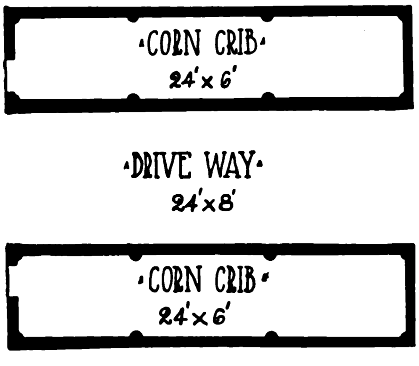
Double Corn Crib with Sloping Sides—Design A105L

This design shows a double corn crib under one roof with a driveway in the center and storage room overhead.

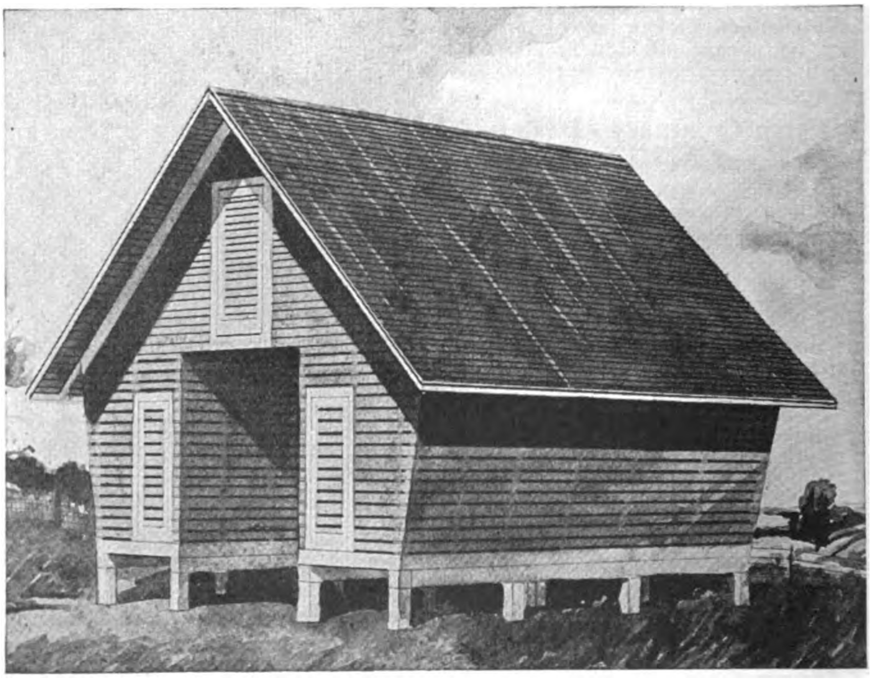
This crib is set on cedar posts planted 3½ feet in the ground, and projecting 2½ feet above the ground so the crib floor is well up, out of the way of rats and mice.

The space in the center is convenient to store a couple of wagons. The crib doors being at the ends of each separate crib, the center space is not used, except when the corn is being put in. Usually, the corn is taken out at the end doors.

There are openings along this passage way for shoveling the corn into the cribs. These shovel doorways may be closed with boards fitting against cleats which are nailed to the studding.

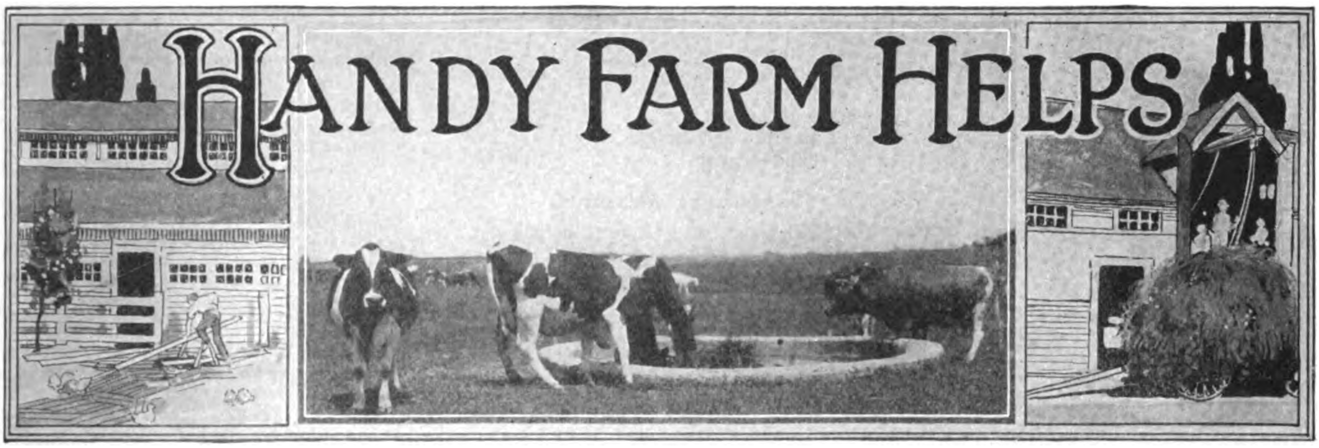


Floor Plan of Crib A105L



DOUBLE CORN CRIB WITH SLOPING SIDES

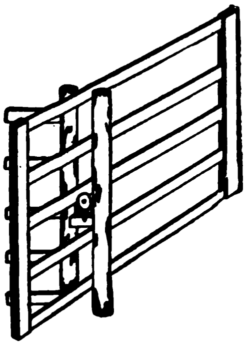
Each crib measures 24 by 6 feet at the base and central driveway is 8 feet wide. Space above is right for the storage of seed corn. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. A105L.



HANDY FARM HELPS

Roller Gate

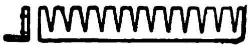
A farm gate 16 feet long, as it should be to get through easily with a hayrack, is too heavy to slide easily. There is a cast-iron roller made for the purpose and sold in hardware stores. The sketch shows how it is fastened to the posts so the gate slides half way back. In a long gate there is always a center piece up and down, with a diagonal brace running from the center to the front end of the gate. The posts are mortised to let in a 2-inch block, and the casting that holds the roller is let into this block and an iron washer slipped over the bolt so the casting will turn easily. As the washer is protected from the wet, it may be kept oiled.



Handy Roller Gate

Whip Hanger

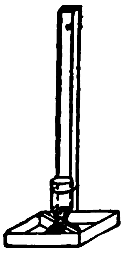
A hanger to keep carriage whips from curling is made with a strip of wood any length and about 6 inches wide with deep, V-shaped notches cut a trifle wider at the bottom than they are at the top. The notches work better when made 3 inches deep, and they should be open an inch at the outer edge of the board and taper to nothing.



Saw Tooth Whip Hanger

Automatic Poultry Feeder

An automatic feeder to hold oyster shell, cut bone or small grain for fowls is easily made with a quart milk bottle. A small wooden box with a partition either straight across or reaching diagonally from one corner to the other, has a notch cut in the top edge to fit the mouth of the bottle. The bottle is held in place by wire staples .



To Measure Hay in a Stack

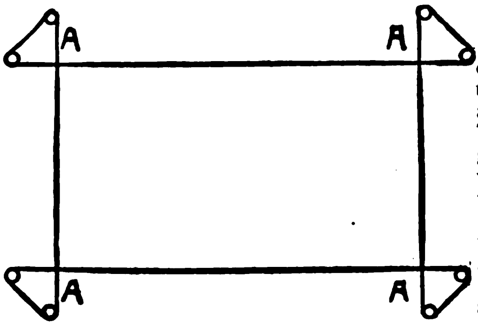
Unless you are a good guesser, don't do it.

Laying Out the Ground for Foundation Walls

You need eight good, straight stakes and a long chalk line. Set the stakes as shown in the diagram and draw the chalk line taut. You can then dig right up to the corners without interfering with the stakes.

The Rule of Six, Eight and Ten

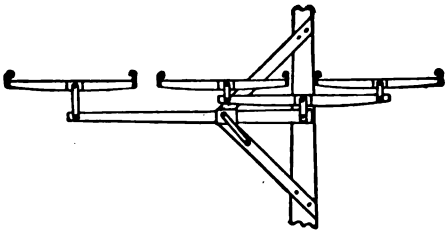
In squaring the lines for the foundation of a building, the following rule will be found very helpful: After the stakes are set and the chalk line drawn taut, take a 10-foot pole and measure off 6 feet from one corner on the line; stick a pin through the line to mark the place. Then, on the other line, measure 8 feet from one corner and mark with a pin. If the distance is exactly 10 feet across between the two pins, the corner is square.



Foundation Lines Staked Out

Three-Horse Evener

To make a satisfactory three-horse evener to use on a pole, make a solid iron brace out of a heavy wagon tire and bolt on top of the pole, as shown in the sketch. The distance of the draw bolt from the pole must be one-third of the length of the main draw bar, and this of course must vary with the size of the horses and the length of the whiffletrees. Usually, the distance will be about 12 or 14 inches. There should be a brace from the under side of the pole to the under side of the main brace, and the draw bolt should go down through the strap and through the under brace. This arrangement is almost as handy to use as a common doubletree and whiffletrees for two horses, because the brace supports the weight of the evener and it remains in place at all times. Some provision must be made for side draft, but that can usually be done according to the kind of machinery in use. Similar rigs are used on binders, but they apply equally as well to cutaway pulverizers, grain drills and many other farm implements.



Good 3-Horse Evener

Home Remedies

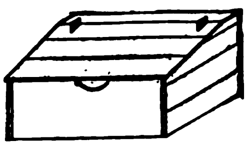
A few simple home remedies are necessary and valuable in every house. At the same time, it is well to guard against acquiring the medicine habit. There are plenty of individuals who go through life and finally leave it without the aid of medicine, though there are others who dose themselves continually. Probably the medicine fiend does not need medicine as much as the fellow who gets along without. It is largely a case of habit. But there are emergencies where a simple remedy will save a good deal of suffering. Applications for burns, bruises and remedies for other accidents that are likely to happen at any time on the farm should be kept on hand.

The following list is simple and, for the most part, harmless:

Olive oil (sweet oil).
Peroxide of hydrogen.
Flour of sulphur.
Epsom salts.
Oil of cloves.
Listerine.
Castor oil.
Spirits of ammonia.
Boracic acid, saturated solution(used as eye remedy and for disinfectant).

Covered Salt Box

Animals will help themselves to salt if it is kept in a box like this. They soon find how to lift the cover. Hinge the lid in such a way that it will drop of its own accord when the animal goes away. The opening in front should be about 6 inches wide and about 4 deep and the lid should project over the front edge of the box about an inch.



Salt Box with Cover

IF your neighbor is going to build tell him about this book—and do both him and us a good turn.

Weights and Measures Used in the United States

Troy Weight.

24 grains	1 pwt.
20 pwt	1 ounce
12 ounces	1 pound

Used for weighing gold, silver and jewels.

Apothecaries' Weight.

20 grains	1 scruple
3 scruples	1 dram
8 drams	1 ounce
12 ounces	1 pound

The ounce and pound in this are the same as in Troy Weight.

Avoirdupois Weight.

27$\frac{11}{32}$ grains	1 dram
16 drams	1 ounce
16 ounces	1 pound
25 pounds	1 quarter
4 quarters	1 cwt.
2,000 pounds	1 short ton
2,240 pounds	1 long ton

Dry Measure.

2 pints	1 quart
8 quarts	1 peck
4 pecks	1 bushel
36 bushels	1 chaldron

Liquid Measure.

4 gills	1 pint
2 pints	1 quart
4 quarts	1 gallon
31½ gallons	1 barrel
2 barrels	1 hogshead

Square Measure.

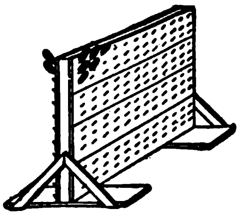
144 square inches	1 sq. foot
9 square feet	1 sq. yard
30¼ square yards	1 sq. rod
40 square rods	1 rood
4 rods or 160 sq. rds.	1 acre
640 acres	1 sq. mile

Time Measure.

60 seconds	1 minute
60 minutes	1 hour
24 hours	1 day
7 days	1 week
28, 29, 30 or 31 days	1 calendar month
(30 days	1 month in computing interest.)
365 days	1 year
366 days	1 leap year

Rack for Seed Corn

When it is desirable to test seed corn and to keep an accurate account of each ear, there is no better plan than to stick the cobs on the points of wire nails that have been driven through a partition of inch boards. Each nail is numbered so that when the corn is tested a corresponding number in the testing box indicates the ear the grains were taken from. Ears of seed corn may be put on the rack in the fall and left without handling until time for testing and planting in the spring.



Seed Corn Rack

Circular Measure.

60 seconds	1 minute
60 minutes	1 degree
30 degrees	1 sign
90 degrees	1 quadrant
4 quadrants, 12 signs or 360 degrees	1 circle

Long Measurue.

12 inches	1 foot
12 inches	1 foot
3 feet	1 yard
5½ yards or 16½ feet	1 rod
40 rods	1 furlong
8 furlongs or 5,280 feet	1 statute mile
3 miles	1 league

Cloth Measure.

2¼ inches	1 nail
4 nails	1 quarter
quarters	1 yard

Paper Measure.

24 sheets	1 quire
20 quires	1 ream (480 sheets)
2 reams	1 bundle
5 bundles	1 bale

Surveyor's Measure.

7.92 inches	1 link
25 links	1 rod
4 rods	1 chain
10 sq. chains or 160 sq. rods	1 acre
640 acres	1 sq. mile
36 sq. miles (6 miles square)	1 township

Cubic Measure.

1,728 cubic inches	1 cubic foot
27 cubic feet	1 cubic yard
128 cubic feet	1 cord (wood)
40 cubic feet	1 ton (shipping)
2,150.42 cubic inches	1 standard bu.
231 cubic inches	1 standard gal.
1 cubic feet, about 4-5 of a bu.	

Mariner's Measure.

6 feet	1 fathom
120 fathoms	1 cable length
7½ cable lengths	1 mile
5,280 feet	1 statute mile
6,085 feet	1 nautical mile

Miscellaneous.

3 inches	1 palm
4 inches	1 hand
6 inches	1 span
18 inches	1 cubit
21.8 inches	1 Bible cubit
2.5 feet	1 military pace

Wood and Lumber

A cord of wood contains 128 cubic feet. To ascertain how many cords there are in a pile of wood, multiply the length by the height, and that by the width, and divide the product by 128.

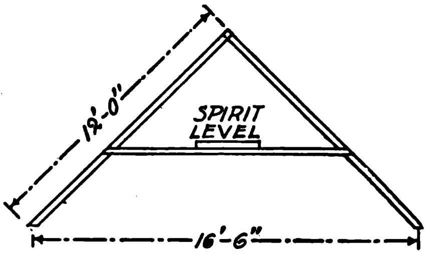
One-fifth more siding and flooring is needed than the number of square feet of surface to be covered, because of the lap in the siding and matching.

To measure round timber, take the girth in inches at both large and small ends, add them, divide by 2, which gives the mean girth; then multiply the length in feet by the square of one-fourth the mean girth, and the product will be the contents in cubic feet. This rule is commonly adopted, and gives four-fifths of the true contents, one-fifth being allowed to the purchaser for waste in sawing.

One thousand lath will cover 70 yards of surface, and 11 pounds of lath nails will nail them on. Eight bushels of good lime, 16 bushels of sand and I bushel of hair will make enough good mortar to plaster 100 square yards.

Land Level

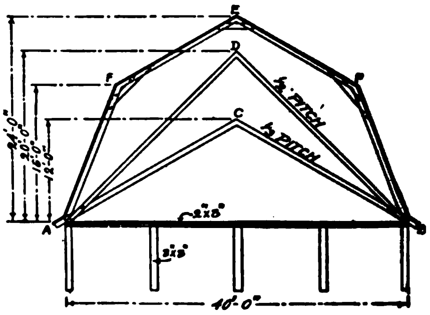
A cheap land level that would be found useful on any farm is easily made out of three pieces of ⅞-inch lumber, 3 inches wide. The two outside legs or strips are 12 feet long, and the bottoms are placed 16½ feet apart, so that the level, when finished, will step a rod at a time. Nail the legs together at the top and nail the cross piece on at one end. Then place the feet a rod apart on a level floor, put the level on the cross piece and raise or lower the loose end until it comes right. When it shows right, tack it and reverse the feet to prove. The same rig may be used by hanging a plumb-bob from the point at the top. Make a mark on the board where the line crosses when the feet are standing level.



Home-Made Land Level

About Barn Roofs

The accompanying illustration shows three ordinary roofs. The third pitch was the old style used almost universally a hundred years ago, shown at C. This gives mow room 12 feet deep at the peak above the plate line in a barn 40 feet wide. The half pitch roof shown at D gives 20 feet mow room in the center above the plate, while the roof shown at E gives a height of 24 feet in the center and 16 feet at FF. It will readily be seen that the value of such a roof is very much greater than either straight roof when it comes to storage capacity.



Three Common Pitches of Roofs

Besides the advantage of increased storage, the larger roof is right when it comes to turning water. The upper part is not very steep. The upper roof is short and it is not necessary that it should be steep, because there is very little accumulation of water. The lower portion of the roof drops away quickly. This is exactly the reverse of the old style lean-to, where the addition sloped away and held a large amount of water to rot the shingles.

The advantage of a double roof pitch was never appreciated until horse forks came into general use to put hay and sheaves up into the loft in such quantities and so quickly that considerable storage room was found necessary in which to mow it away. Then again, it requires from 8 to 10 feet headway to use a hay fork to advantage. In figuring the capacity of the different shaped roofs this fact should be taken into consideration.

It costs a little more to build a double roof, but the extra cost is not in proportion to the extra value. Then, for a finish to a modern barn, nothing will equal in appearance one of the double or gambrel roofs when well built and rightly proportioned.

Average Periods of Incubation

Chickens	20-22 days	Guinea fowls	28 days
Geese	28-34 days	Pheasants	25 days
Ducks	28 days	Ostriches	40-42 days
Turkeys	27-29 days	Pigeons	18 days
Canary Birds	14 days		

Average Periods of Gestation

The period of gestation in animals varies considerably, but the following is an average period based on a long series of observations:

Ass	12 months	Pig	3½ months
Mare	11 months	Bitch	9 weeks
Cow	9 months	Cat	8 weeks
Sheep	5 months	Rabbit	30 days
Goat	5 months	Guinea pig	65 days

Covering Capacity of Shingles

Average size of shingles—4x16 inches—is taken as a basis of calculation.

100 sq. ft. will require, laid 4 inches to the weather.......900
100 sq. ft. will require, laid 4½ inches to the weather.....800
100 sq. ft. will require, laid 5 inches to the weather.......720

Five and one-half pounds of four-penny nails are required for laying 1,000 shingles.

5 to 10 per cent should be added to these figures for waste and shortage.

Barrel Measure

The standard flour barrel holds 196 pounds of flour. 200 pounds of beef, pork or fish make one barrel. A barrel of potatoes is supposed to weigh 135 pounds; apples the same. A barrel of salt is 280 pounds. A barrel of Portland cement is 400 pounds. Of sugar, 200 pounds make one barrel. There are 100 pounds of nails in a keg. Ground gypsum weighs 70 pounds per cubic foot.

Cubic Inches

There are 2,150.42 cubic inches in a bushel. The number of cubic inches in a gallon is 231.

Miscellaneous Table

Forty-three thousand five hundred and sixty square feet make one acre. There are 5,280 linear feet in a mile. A gallon of water weighs a little over 8 lbs. A gallon of milk the same. A cubic foot of water weighs 62½ lbs.

Four inches equal one hand in measuring horses. One rod equals 25 links, or 16½ feet. One chain is 4 rods, or 66 feet. One mile is 80 chains, or 5,280 feet. A common lath is 4 feet long and 1½ inches wide. A bundle of lath is supposed to cover 3 square yards. One thousand shingles laid 4 inches to the weather will cover 100 square feet of roof. Five pounds of shingle nails are required to nail 1,000 shingles.

Farm Machinery for Potatoes

Farm machinery is expensive. But it is more expensive to do without.

Special crops require special equipment. After it is provided, the equipment must be kept busy. If a farmer produces five acres of potatoes, he needs a potato cutter, planter, riding cultivator, sprayer that works under high pressure, a digger and a grader. The same outfit will answer for forty acres, which would reduce the per-acre cost considerably.

No farmer can afford to grow five acres of potatoes without the necessary machinery, because hand labor is out of the question for work of that kind.

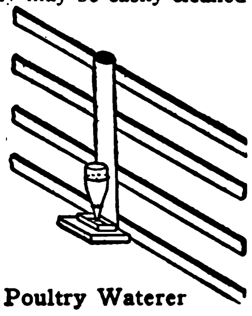
On the right kind of soil, and within reach of the right market, potatoes are money makers. But they must be grown every year, because the price of potatoes fluctuates more than any other farm crop.

Under the right conditions, potatoes grown for five years with proper care and right management are sure to make money. One year out of the five will break even, two years will make a little money, and the other two years will make big money.

At the end of five years, if the potato machinery is housed when not in use, it will be all paid for, and there will be a nice bank account.

Bottle Drinking Fountain

One-quart and two-quart glass bottles make the very best drinking fountains for poultry. They may be easily cleaned and you can see when they are clean. Use heavy wire for staples driven into a post or stake. The lower staple regulates the height of the fountain and the upper staple steadies it. Use a tin or earthenware dish under it. An old saucer works well. Block it up just high enough so the water won't overrun the dish.



Poultry Waterer

About half of our insect pests are of foreign origin. They were imported on nursery stock, fruit, ornamental trees, etc.

Some Dairy Terms

The term **MILK SOLIDS** means all there is in milk except water.

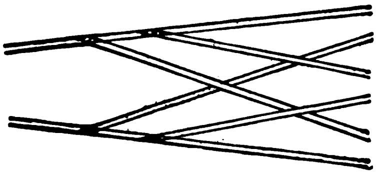
PASTEURIZING milk means to heat it to a temperature of 150 degrees F., and hold it there for thirty minutes, to kill most of the harmful bacteria.

STERILIZING milk means to heat it almost to the boiling point and to hold it at that temperature long enough to kill all of the bacteria.

FIBRIN is a substance which forms a fine network in milk. At certain temperatures it prevents the free rising of cream.

Lines for Three Horses

It is easy to make a set of lines and checks suitable for three horses, simply by adding two long checks to the ordinary double lines as shown in the sketch. Make the checks plenty long, because you need more room for three horses than you do for two. Often in hot weather, when working in the fields, you want to spread the horses as much as possible, and you must have long checks in order to do so.



Lines for Three Horses

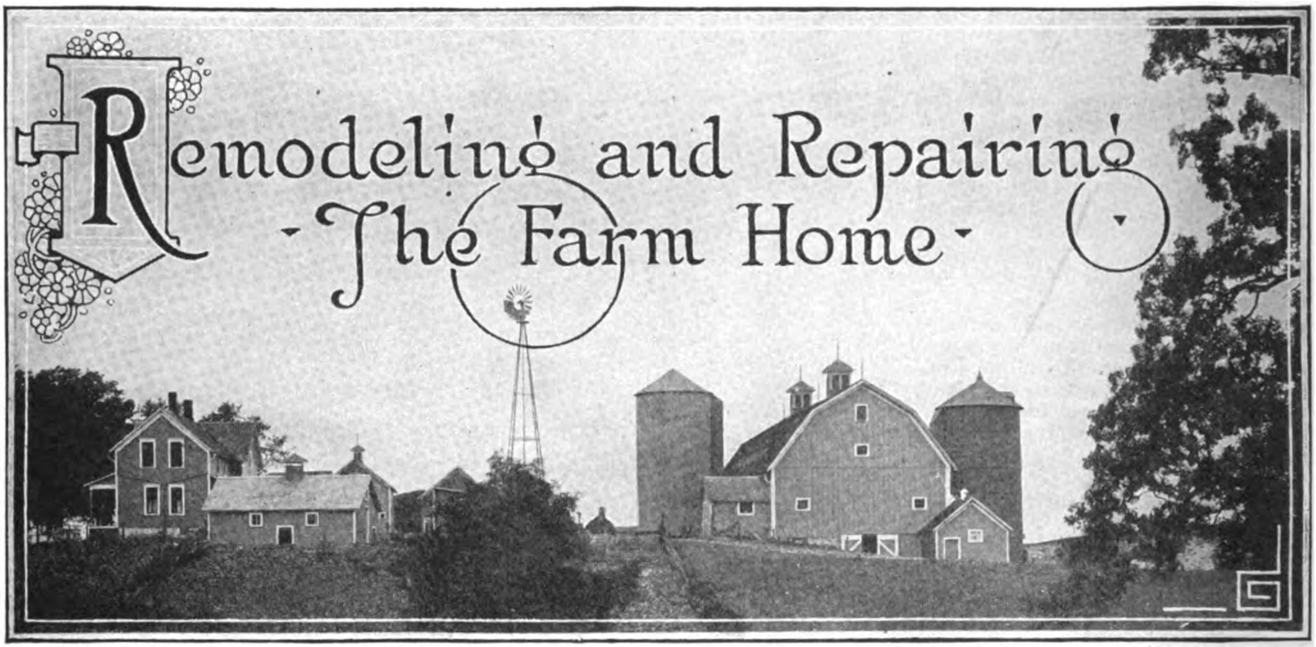
Corn exceeds all the other common feeding grains in fat content, with 4.3 per cent. Oats is next, with 3.8 per cent, while wheat is only 1.5 per cent. Emmer, which is in reality a species of wheat, contains 2 per cent fat.

Pleasure and Profit in Deer Farming

The preservation of our best game animals has engaged the attention of a great many wealthy Americans. The idea of enclosing an old slashing or forest with barbed wire and stocking it with deer has proven very satisfactory where conditions are right and where the undertaking has been followed with intelligence.

In addition to a proper sentiment to preserve the deer family, the business may be made very profitable. Parks and zoological gardens all over the country are willing to pay fair prices for good specimens. The meat is considered a luxury and the skin, horns, heads and teeth are valuable in the mechanical arts.

Remodeling and Repairing The Farm Home



Farmers Find Wall Board Handy Material

For fitting up a room in attic or stable or for new partition work and remodeling, wall board is the quickest, cleanest and most satisfactory material the lumberman carries. It is a substitute for lath and plaster that brings with it none of the mess nor half the expense of lath and plaster.

It comes in 3-foot widths, any length required and may be put on by anyone who is careful enough to keep the edges plumb at the sides and straight across the ceiling.

One gable of the house attic lined with wall board will suggest how the whole attic may be divided into sleeping rooms or nicely decorated to make a big playroom for the children.

Think of what can be accomplished in practically every home simply through the use of wall board. Rooms can be remodeled or reshaped; partitions can be built within any part of the home and not in any way detract or effect the general appearance; attics and basements can be remodeled and attractive rooms formed within their space; trunk rooms or rooms for general storage purposes can easily be made; billiard rooms or dens can be fitted up for the men folks; and sewing rooms and playrooms for the children can be built in. In fact, there is really no limit to the remodeling or refixing work that can be accomplished through the use of wall board.

If rooms are partitioned off with light strips, then 2x4s should be used to support the door frames and casings. The wall board is placed against the door frame and the casing nailed over it, the same as when lath and plaster is used.

After the wall board is put on, it may be tinted and decorated with water paint. It lends itself to any kind of finish that plaster will take and it looks especially well with a neat scroll design done as border work on wall board panels.

For a beam ceiling, nothing is better than wall board for the panels. Sometimes the panel effect is carried down the side walls to the baseboard. There are many ways of using wall board for decorative purposes, as well as to make good and substantial partitions.

One woman even used it to cover a very poor floor in an attic room. It may be cut with a saw the same as lumber.

It has been used for packing boxes, usually as sides or ends, in connection with wooden frames.

Repairing the Old Roof
And What Came of It

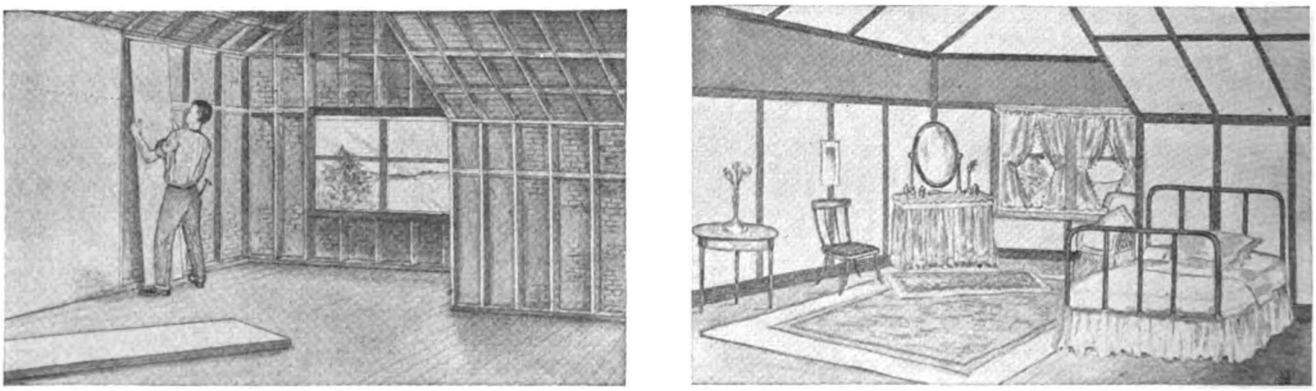
Farmer Johnson brought his team in from the stalk field in a hurry, because of a smart shower. He drove under the shed, climbed out of the wagon and stood in the lee of the shed end weather boarding, because of the drip in different places from a very leaky roof.

His son, Harry, came out of the barn to help the old man put the horses in the stable. As he entered the shed, he made the remark:

"Father, I think it is time we put a new roof on this shed. We have our binders, grain drill, cultivators and mowing machine stored here and we should have the place full because the other implements are scattered around the yards and will soon be down in the mud."

"Well," the old gentleman said, "I guess you are right. The fact is, we have been so busy on account of feeding more cattle this year than we have had before, I suppose we have neglected some things.'

"Yes, father," said Harry, "I think we should look after some repairs on the house, too. Mother and the girls have put up with things in the old house for some time. We have mon-



BEFORE

AFTER

Unused Attic Space Made Into a Delightful Chamber by Finishing Off with Wall Boards ey in the bank to make things snug and comfortable, and I think it is time to get busy."

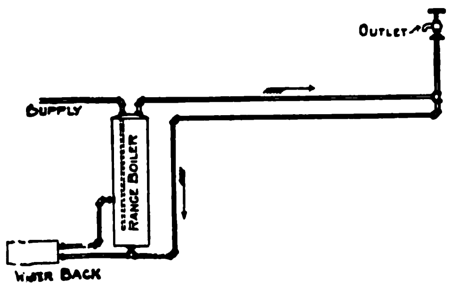
Farmer Johnson took off his battered old hat and rubbed the bald spot on the top of his head and looked at Harry with that very kindly expression that the old man was noted for. He said: "Well, Harry, when the rain lets up we will drive down to the village and talk to some of those roof fellows and get some of their ideas; and mebby it won't cost much to fix up these old roofs. Mebbe while we are there we can talk to the carpenter about a new kitchen. I know mother talked about it several times, but we have always had use for all of our money. I suppose we could use some of the money we have now for buying cattle, but I think you are right; mother and the girls should be looked after a little better. Now I am going to look over the paper; you put the horses away, and after dinner we will see what we can do about it."

Down at the lumber yard that afternoon, Farmer Johnson and Harry became quite interested in learning that roofing is not so darned expensive as they expected. The result of their visit at the lumber yard was, that they not only repaired the leaky roofs, but they decided on other improvements, so that in a few weeks' time the old house took on a new appearance. New steps in front, a fresh coat of paint, the new kitchen, a comfortable bathroom with hot and cold water, and a few minor details made a great difference in the comfort of the family. For the first time in years the old man had really paid attention to the household needs of his wife and daughters; not because he didn't care, but he had been busy working out his farm plans and something had to be neglected.

Instantaneous Hot Water

With a hot water tank connected with range or furnace, it often happens that the water runs cold on the second floor for a couple of minutes till the water is drained from the pipes. A farmer who is about to remodel his house, writes: "How can I have the pipes arranged in my new house so the hot water will be right at the tap?"

This plan may help: It will require a return pipe which has a fall from the highest outlet. There should be no traps in this line of pipe. The water will circulate through the system of pipes as long as there is hot water in the range boiler, and will remain hot up to the point where the outlets are taken off.

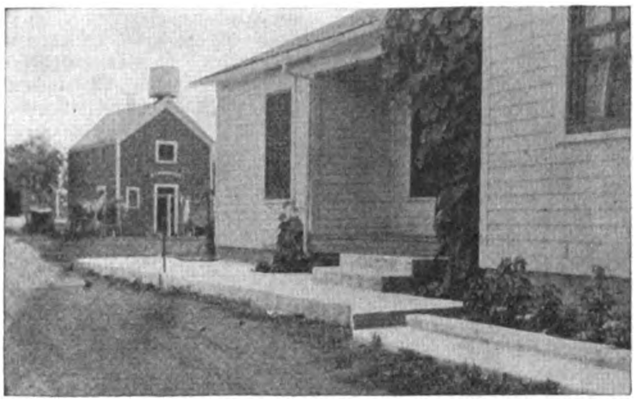


Piping to Keep Hot Water on Tap All the Time.

Laying Out Cement Walks

Every farmer should have cement walks. The expesne is not so great as a good many suppose. In order to do such work right and cheaply, it is necessary to think it over for some time before making a start at the actual work. But you need the walks and you need sand, gravel and cement to make them, and you will need a little bit of lumber to make the forms.

The cost of the 2 by 4 for border pieces is very little, but you have got to have them, and you might as well load them in the first time you go to town. You must have a straight 2 by 4 on either side of the walk. You get the grade from the 2 by 4 side strips. You plant them just deep enough so the tops of the scantlings come where you want the top of the walk. A walk should be elevated above the grass about an inch. If the ground is not even, you may need several lengths of 2 by 4s to get the grade divided between the humps and hollows. You need wooden stakes to drive on the outside of the 2 by 4s and you need a number of 2 by 4 cross pieces to hold apart the 2 by 4 stringers the right distance.



Concrete Put to Effective Use in Several Different Ways on Farm of N. A. Rasmussen, near Oshkosh, Wis.

You do not need any nails, just stakes driven so they hug the proper pieces. If they need to be raised, the 2 by 4s may be chinked up with stones or the ground dug out to let them down to the proper grade.

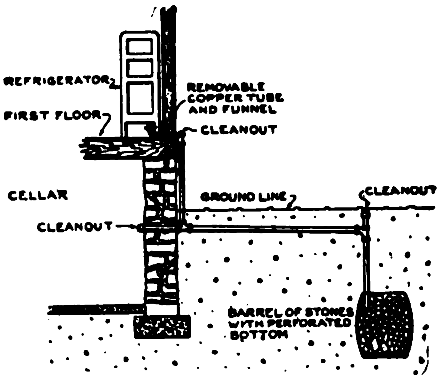
The inside of the walk should be from one-quarter of an inch to one-half inch higher than the outside of the walk so the walk will drain, otherwise it will be wet a good deal of the time in winter.

Renew Those House Floors

The old farm house is floored with soft wood. Along the principal lines of travel the old floor is worn down between the knots to the tongue and groove.

It is impossible to clean such a floor, but the women folks are always trying to do it. The amount of labor wasted in one month in this vain effort would lay a splendid hardwood floor over the old one.

Handy Ice Box Drain


REFRIGERATOR
FIRST FLOOR
REMOVABLE COPPER TUBE AND FUNNEL
CLEANOUT
CELLAR
GROUND LINE
CLEANOUT
CLEANOUT
BARREL OF STONES WITH PERFORATED BOTTOM

Arrangement of Ice Box Drain Without Sewer

It is a nuisance to be obliged to empty the drain pan under the kitchen ice box. The sketch shows how the drip may be drained away automatically during the whole ice season. At the same time, a clean-out is provided in case any trouble should occur.

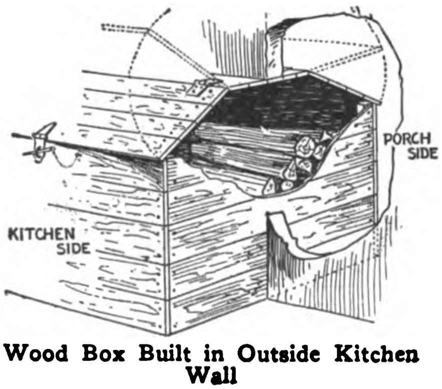
Every ice box is provided with a water trap that lets the water trickle through and at the same time prevents air from getting into the ice box through the drain pipe.

Wall Wood Box

A Kitchen Convenience

The bane of the neat housekeeper's existence is the dirty wood box in the kitchen, and the work and muss of lugging in stove wood to put into it.

An ingenious builder recently devised an improvement. He built his wood box in the outside kitchen wall. Made it open both into the kitchen and onto the porch, as illustrated. The boys fill the wood box from the outside, which saves them many steps and keeps the dirt and snow out of the kitchen.

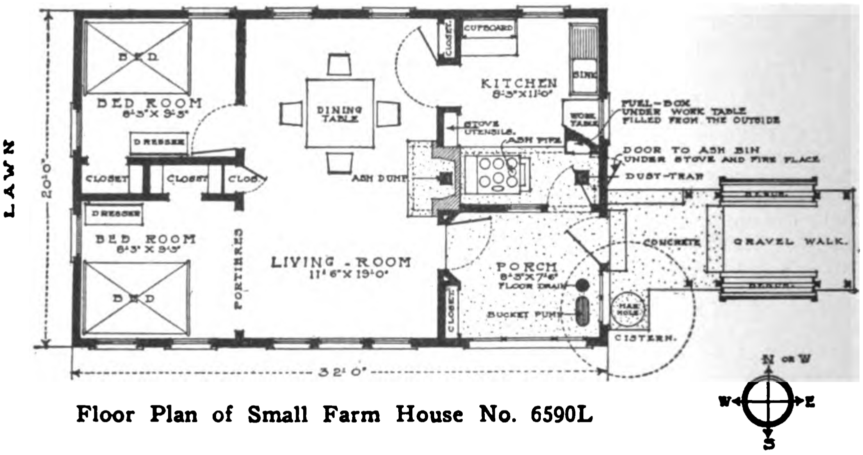


Wood Box Built in Outside Kitchen Wall

U. S. Government Model $1,000 Farm House

The Department of Agriculture has made public the first of a series of plans for farm houses to be prepared by its specialists, with a view to enabling farmers to construct inexpensive and better homes. The basis of the inquiry is the belief that the farm house is the most important building on the farm, and money judiciously expended in its planning and construction is well invested. The objects sought in the plans are to provide structures reasonable in cost and of good material, and so arranged as to give the maximum in health, comfort and happiness to the family, and added convenience to the housewife in her domestic operations.

These plans are for the construction of an inexpensive farm tenant house, although the house as planned contains many valuable suggestions for owners with small families. The provision of proper tenant houses on farms, it is believed, is of increasing importance to farm management because of the increasing number of rented farms, the growing demand of tenants for modern houses and a better understanding of the influences of the home upon farm labor and efficiency. The census report of 1910 shows an increase during the previous ten years of more than 324,000 rented farms. Many of the new tenants moved into good houses vacated by the owners, but many others are living in buildings wholly unsuited to their needs. The cost of these houses commonly is inconsistent with the value of the farms, and the lack of improvements in them too often is in striking contrast with the outbuildings, farming machinery and field equipment.

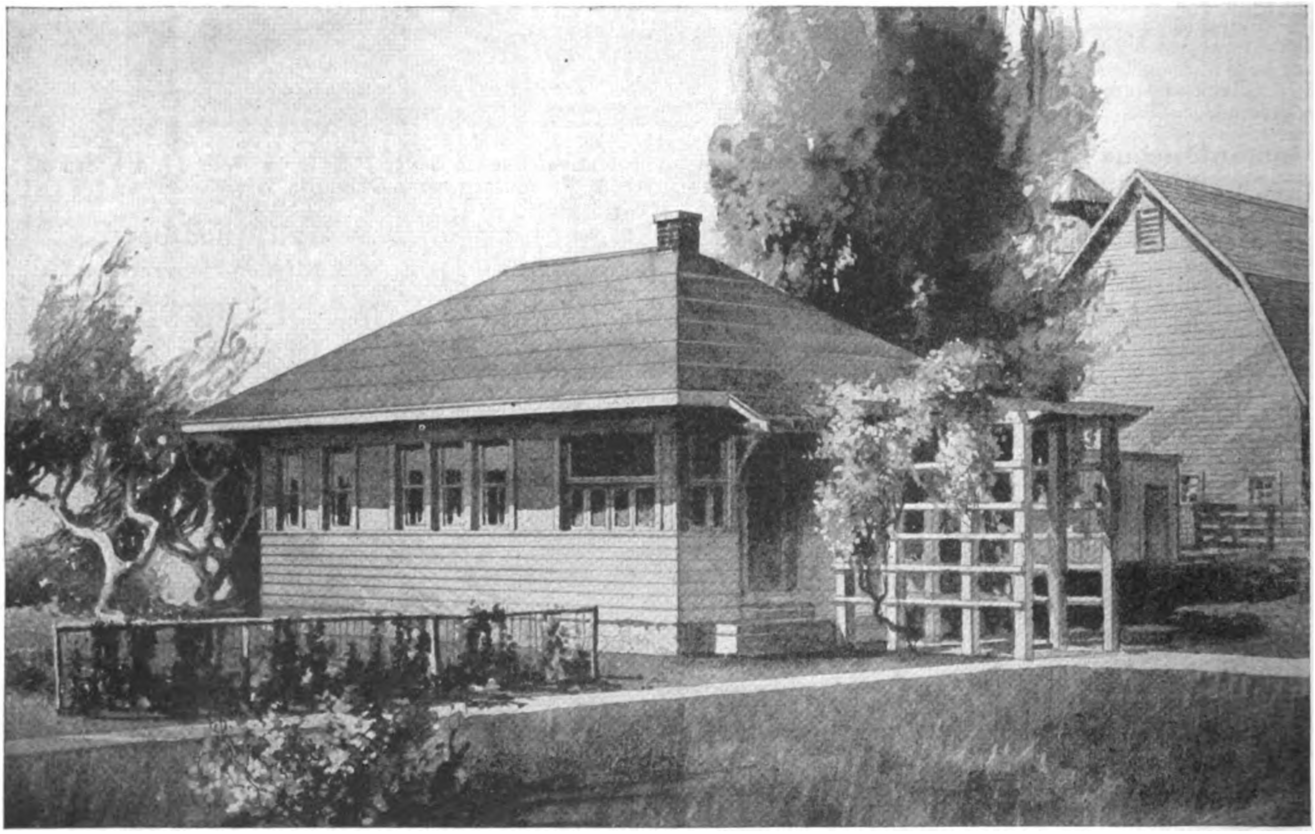


Floor Plan of Small Farm House No. 6590L

The tenant house, perspective drawing and plan of which are shown, is a simple, four-cornered structure, without bay windows, gables and dormers, or any projection save the cornice which overhangs and protects the walls and window openings. The house is planned for the smallest dimensions and the most inexpensive arrangement consistent with the needs and the convenience of small family. It has but one chimney and but one outside entrance.

One entrance would be insufficient in a town house and it may be in this one; but another door can be gotten into the plan only by a sacrifice of wall and floor space, which cannot be spared, or by increasing the size and cost of the house, which, in connection with this problem, cannot be done. If a door is substituted for one of the three windows in the south end of the living room, the best part of the room will be ruined. Moving the entrance door to the south side of the porch would not only restrict the uses of the porch, but necessitate an outside door in the kitchen, which, in turn, would necessitate a corresponding increase in the floor and wall space of the kitchen. If the door that opens from living room to porch were moved farther from the fireplace, valuable floor and wall space in both room and porch would be sacrificed.

These little details affect the size of rooms and of the building, and therefore the cost. They are sometimes, and of necessity, influenced more by econ-



SMALL FARM HOUSE RECOMMENDED BY U. S. DEPT. OF AGRICULTURE

Very cleverly arranged four-room cottage, 32 by 20 feet, containing extraordinary conveniences for small farm home or tenant house. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. 6590L.

omy than by convenience; but, by careful study they may often be made consistent with both. It is economical, for instance, to have but one outside entrance to this house. With this entrance nearest the barns and the entrance from the highway, and treated as it is with the simple and inexpensive pergola and benches, which separate the lawn and the back yard, it should serve every purpose of a front door, and as well, also, a kitchen door. In many ten and twelve-room farm houses with three or four outside doors, only one door is much used, and that one is either in or near the kitchen.

Notwithstanding the simplicity and the playhouse appearance of the building suggested by the department, it provides more usable space for the daily activities of the family than many larger houses. It is more convenient for a small family, more comfortable, healthful and delightful than many farm houses costing twice as much.

THE KITCHEN. Very few residences of any size or cost have a kitchen more pleasantly located, better lighted and ventilated and more conveniently arranged than this little four-room house. It is brightened by the morning sun, cooled by the southern breezes and shielded from the intense heat of summer afternoons. It commands a view of the garden, the playgrounds, the barns, the lawn, the gate and the highway. It opens onto a screened porch which, in summer, is the most liveable nook in the house. Much of the kitchen work may be done there, away from the fumes and the heat of the stove, which, happily for the other rooms of the house, blow out through the north and east windows.

LOCATION OF THE STOVE AND ASH BIN. The stove is well lighted, and with the porch window closed, it is out of the cross-drafts of air. It is within 6 feet of the most distant fixture in the kitchen and but little farther from the dining table. All stove utensils are within reach, and the work table and the fuel in the box beneath it are but two steps away. The ashes drop from the firebox of the stove, through a short pipe to the ash bin underneath the concrete floor.

The walls of this under-floor bin are shown on the plans by dotted lines. The bin is under the stove and fireplace and extends to the outer foundation wall of the kitchen, where the ashes and floor sweepings are removed by means of a long-handled drag. If the building is raised on a front terrace, the bin will be 26 inches deep, with its floor at ground level. With a cellar under the kitchen, the bin need be extended only to the front end of the stove. It will be deep enough to hold a year's supply of ashes.

The fuel box supporting the table top, occupies space which might otherwise be wasted. It is filled from the outside of the house and emptied from the inside through a small door over the concrete floor.

A trap or dump like that in the fireplace, is provided for floor sweepings and possible dust from the door of the coal or woodbox. It is in the concrete floor, behind the kitchen door, near the fuel box opening and over the ash bin.

The carrying of fuel and ashes is thus eliminated from the woman's work; provided the man or boy fills the coal or woodbox each week, and empties the ash bin two or three times a year.

WATER SUPPLY. The water problem has also been carefully considered in this little plan. Cistern water may be drawn from the bucket pump on the porch, or if desired, from a pitcher pump at the sink. Hot water is heated and stored in the reservoir of the stove. The sink, with only the drain pipe to be provided, is too inexpensive to omit from any kitchen, and space enough has been saved in this one to more than pay for all such conveniences.

This kitchen excels many others in not being a thoroughfare to other rooms. The men and boys will wash on the porch, leave their hats and raincoats there, and enter the living room without disturbing the kitchen workers.

THE PORCH. The Screened porch is as large as the plan will permit; but too small for all the purposes for which it will be in demand. Besides the usual kitchen work, the ironing and perhaps the clothes washing will be done there. The one screen door locks up the house; and butter, meat and milk put on the porch to cool at night will be secure against dogs and cats. The porch will be in demand also as a dining-porch, sitting-porch, sleeping-porch and playroom. Its uses and the comfort of the house in winter may still further be increased by putting in porch sash and a solid door.

THE LIVING ROOM. The living room is large enough for the longest dining table that harvest days will ever require, and, with its two routes to the kitchen, it is unusually convenient for feeding a large number of workmen. With triple windows on the south and two on the north, a screened porch on the east, and an alcove bedroom on the west, it is as pleasant a dining and sitting-room as a $5,000 house can afford, and, with a glowing fire in the hearth, it may be as comfortable and as cheerful in winter as a steam-heated mansion. This house should cost from $800 to $1,000, depending on local conditions.

The high cost of living is caused by the big prices charged for the things we buy.

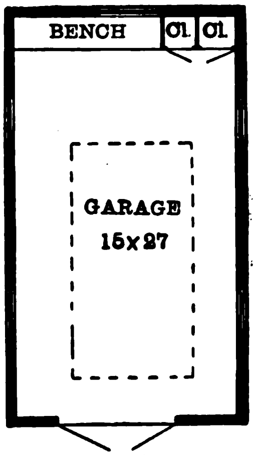
The Farmer's Garage

Because a farmer finds it necessary to do a great deal of his own repair work, his garage should be more elaborate than a building for the same purpose in town. The garage is a good place for the gasoline engine that drives the pump and other machinery. The engine room should contain a work bench and a pretty good set of tools for working iron. The outfit will depend on whether the farmer is a real mechanic or just an ordinary tinker. Some farmers can do a good quick job of repair work and save the expense of a regular mechanic, while another farmer can better afford to hire his mechanical work done and spend his own time with his live stock and other farm affairs. But in either case, some kind of a workshop is necessary on a farm.

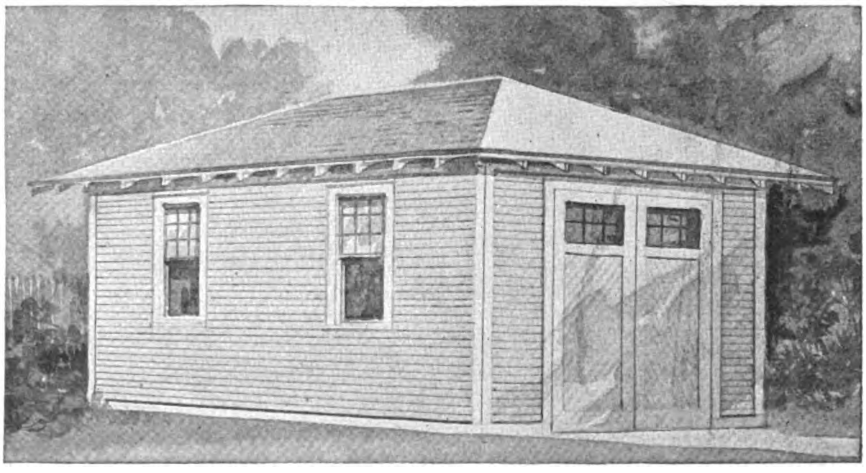
Small Garage—Design G102L

On farms where little garage room is required, this house answers the purpose very well. It is 16 feet wide by 28 feet in length, which gives room for a bench and tools in the far end.

It is a neat building that looks well on any place and may be constructed for very little money. The main features are to have storage sufficient to accommodate one or two cars with extra room enough to do repair work. It is quite important to have the garage a little distance from the other buildings. In some states fire insurancee laws require a certain number of feet distance from other buildings on account of the storage of gasoline. It is just as well to comply with the rules and regulations for as a general thing they are sensible.



Floor Plan



SMALL LOW-COST GARAGE

A safe, satisfactory one-car garage, long enough for work bench at one end. We can furnish complete set of blue-printed working plans and typewritten specifications for only $4.00 per set. Size of building, 15 by 27 feet. When ordering, ask for Design No. G102L.

Modern Heating Systems for Farm Homes

WARM-AIR FURNACES. A very satisfactory way to heat a small house is by means of a furnace in the cellar. A few rules for setting the furnace, carefully followed, will add very much to its heating capacity and general satisfaction.

There is a principle of the circulation of warm air that is not always well understood. Warm air is lighter than cold air and it naturally goes upward. A warm-air furnace requires 7½ feet of head room in the cellar. Most farm houses lend themselves easily to this plan of heating, but sometimes the cellar is not more than 6½ feet deep. In such buildings, a pit may be made and the furnace set down to get the necessary slope to the pipes. Warm air from the furnace travels through a level pipe with great difficulty, but it shoots up through a vertical pipe in a hurry. A warm-air furnace should be placed centrally under the rooms to be heated. It is sometimes better to place it a few feet toward the prevailing winds as the winds sometimes affect the air currents in the house.

One great advantage of the warm-air furnace is that it supplies fresh air from the outside. For this reason, the cold air supply should always be taken from the open atmosphere. Mistaken economy has induced furnace men to take the furnace air supply from the furnace room or the front hall. This is a mistake.

The plan might possibly save a half ton of coal during the winter, but fresh air into the house will save a great deal more than that in doctor's bills.

Warm-air furnaces are made in different sizes. The lumberman can give a pretty good idea of the size necessary to heat certain houses. He has catalogs of many different makes and is frequently able to get special discounts on heating plants.

STEAM HEATING. For large houses, a great many prefer to heat with steam. There is no limit to the extent that steam may be used for this purpose. In some instances the central part of the town is heated from one big steam plant.

Steam for house heating may be carried to the farthest corner of the farthest room and the radiator will be as hot as any other radiator.

There are two systems of piping for steam heating, the single pipe system and the double pipe system. Really, the principle is the same, but the method of carrying the steam and returning the water from the condensed steam is different. It requires a steam-heating engineer to determine all these fine points. But a great deal of information can be had by talking with the local lumber dealer.

A steam-heating plant costs less than hot water heating, because the pipes may be smaller and not so much radiation surface is needed. In actual practice, we generally see large buildings heated by steam and the smaller ones by hot water or warm-air furnaces.

HOT-WATER HEATING. A satisfactory house-heating system is by means of the circulation of hot water. The principle employed is the difference in gravity between hot water and cold water. As soon as water in the boiler is raised a few degrees in temperature it rises in the pipes. Every school boy knows that the warmest water in the lake is near the surface. When he dives, he gets into colder water.

In a hot-water heating system, the hot water is taken from the top of the boiler, where it is warmest, and carried in pipes to the different hot-water radiators in the rooms throughout the house, and as it cools it returns through another pipe to the bottom of the boiler to be reheated; then it takes another round.

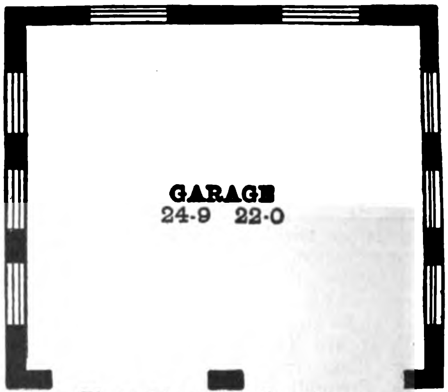
The hot-water system of heating is the most expensive method of heating, because it requires more heating surface than steam, for the reason that the heating is done at a lower temperature than steam heating.

There are many different kinds of boilers used, but it pays to get one especially designed for this particular kind of work. There is little or no pressure on the boiler or radiators in a hot

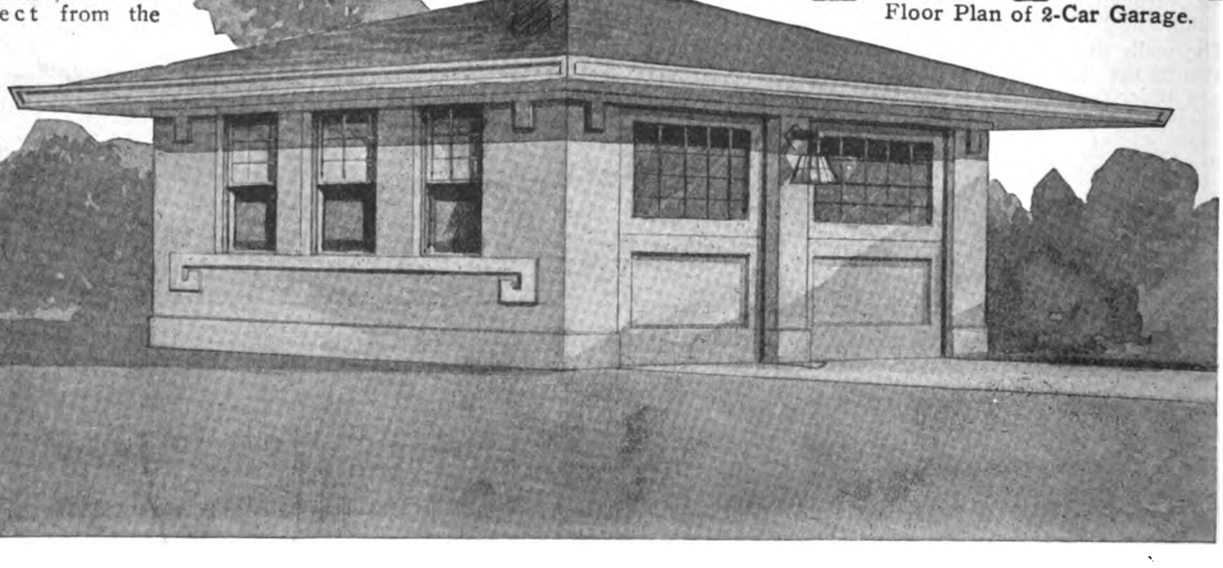
2-Car Garage—Design No. G138L

The first question to be considered in the construction of a garage is—is it practical? No matter how beautiful it may look—no matter how it may be finished or how many pretty windows and corners it may have, if the car to be housed within scrapes the top in passing in or out or is jammed in the sides, the garage is not much good. Any garage, big or little, is built to protect. If it fulfills its mission, it must protect from the weather, from thieves and robbers, and as much as possible from fire.

The garage shown herewith is a popular model and is unique in its design. It has accommodations for two machines, and is built of cement plaster on metal lath. This makes a snug, fire-proof, low-cost building. The wide overhang of the eaves protects the building well. The lines of the design are broad and graceful in the popular modern style.



Floor Plan of 2-Car Garage.



TWO-CAR GARAGE OF PLEASING DESIGN

A satisfactory two-car garage to be built of cement plaster on metal lath or other suitable material. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Size of building, 24 feet 9 inches by 22 feet. When ordering, ask for Design No. G138L.

water system, because the water is open to the atmosphere in the expansion tank. The only pressure is the weight of the water in the pipes, and this pressure is practically constant.

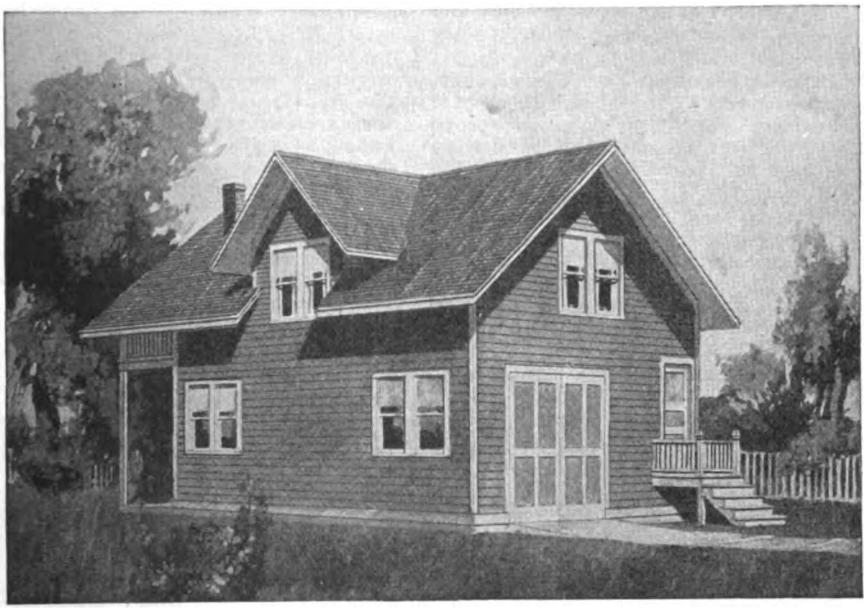
Recent improvements in hot water heating has increased the efficiency and reduced the first cost.

The lumber dealer has a lot of literature on the subject of house heating. Have a talk with him.

Farmer's Automobile Garage and Tool House—Design G156L

A garage and machine shop with living rooms in the second story is a great convenience on a farm. The farm requires extra help, and farmers prefer married men, if they have accommodation for them. There are plenty of good men who prefer farm work to work in the city, but are driven to town because they will not put up with the inconvenience of living in the way they have to do in the country.

This building is 21 feet in width and 29 feet in length, and the plan of the building gives storage for the cars in the front end, with work room in the rear. This work room is a good place for the farm engine. On most farms some kind of engine power is necessary. It may be a portable gasoline engine, or it may be a stationary steam engine. The steam engine is preferred by dairymen, because the boiler produces steam under pressure for heating and cleansing purposes.



FARM GARAGE AND TENANT HOUSE

A useful, well-designed building to house two automobiles on the ground floor. The second floor has three fine living rooms and makes very desirable quarters for farm help. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. When ordering, ask for Design No. G156L.

Dairy farmers prefer a dairy room separate from any other building, but it may be placed just outside, so that the steam and power from the boiler and engine may be easily carried to it. This building plan will help solve the engine house proposition, the farm garage, machine shop, pumping house and dairy, besides the farm labor problem. Automobiles are so common that the building of public garages and their management is getting to be quite a business in towns and cities. On farms the garage is a different proposition, because of the different combinations required. This plan has been worked out to include a number of features that will be appreciated.

Cement walks save tracking mud into the house.

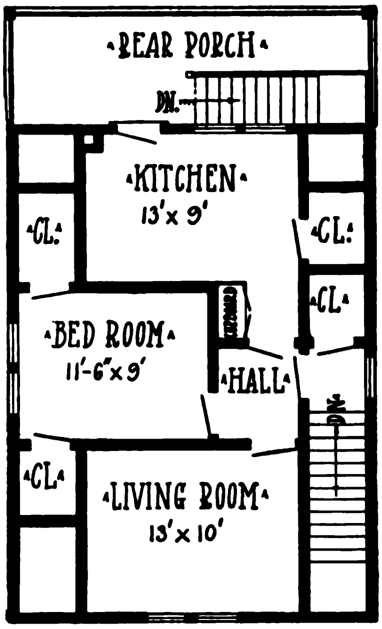
The sensible farmer rides a harrow cart and uses a seat umbrella to protect himself from the hot sun, and he is not laughed at, as formerly. The fact is, a farmer has enough walking to do after he gets through with his day's work in the field, and he requires all his surplus energy to carry him around the premises while doing the necessary farm chores. Then he needs a little surplus vitality when he goes into the house, to use in the way of cheerfulness.

The Rights of Young Folks

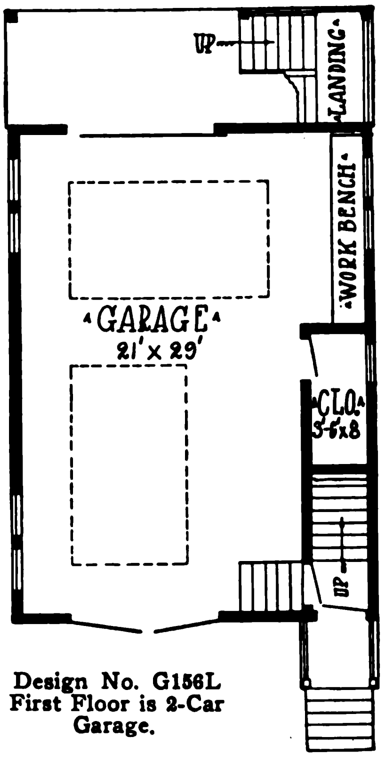
Young farm folks are brought into this world without being consulted. There are a great many of them. In fact, they are greatly in the majority in many farm homes. But the farm home is often managed without much regard to their wishes. They are squelched when they venture an opinion, and they have no part in the profits of their work.

Not every farm is like this, but there are too many farm homes where the comfort and pleasures and heart wishes of young folks are sacrificed to some supposed-to-be-practical ideas of the old folks.

A well-balanced farmer looks first at his income not as an income, but as a means of providing properly for his family. Such a man will see that the profits from the business are so distributed as to get the maximum amount of home comfort, without sacrificing capital that is needed for the purchase of farm live stock and equipment.



Second Floor is Convenient 3-Room Flat for Hired Man and Family.



Design No. G156L First Floor is 2-Car Garage.

Geese

Geese pasture like cows. They enjoy the same kinds of green feed in summer and they will eat hay, straw, roots and grain in winter. They are less trouble than cattle, because they look after themselves.

The Toulouse family of geese seem to have the preference in the United States because they are large.

Mature ganders weigh 20 pounds, mature geese about 18. It requires some skill to mate geese; they have their own ideas on this subject and are very slow in making up their minds. Geese do not mature until they are a year old, but they live a long time if no accident overtakes them.

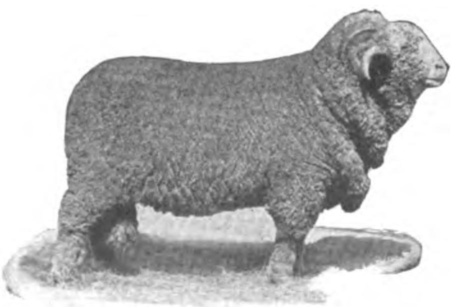
SHEEP

Sheep on the Farm

A few sheep are valuable on small farms, and greater numbers are needed as pastures increase in size. The only limit to sheep raising is the available supply of proper feed and the ability of the flock master to handle the business.

The hoof of the sheep is just as golden today as it ever was in the world's history. A few sheep on a farm are especially valuable to browse the brush from the fence corners, and to eat grass left in bunches in the fields, by horses and cattle; bunches that contain weeds that other farm animals do not relish. Sheep are fond of weeds, and they delight to clean up such places. The gain from keeping a few ewes on a small farm is almost clear profit, because the food they eat is hardly missed.

Sheep do not require warm winter buildings like other kinds of live stock; but a shed is necessary with a stable that may be made comfortable at yeaning time. especially if the lambs come early in the spring. Because a few sheep on a farm take care of themselves, this is no reason why they should be neglected. Sheep kept in small numbers should be very carefully bred. A few lambs sold at a high price for breeding purposes, because the stock is superior, will bring more money than the proceeds of a flock so large that a man on a small farm must take special care of them. Young sheep usually are healthy when they have proper foods with fresh air and exercise. But a little supervision is necessary to ward off attacks from the different sheep parasites. Sheep should have a flock yard, partly covered by a roof of some kind, where they may be yarded and fed in winter, away from the larger stock.



Prize Rambouillet Ram

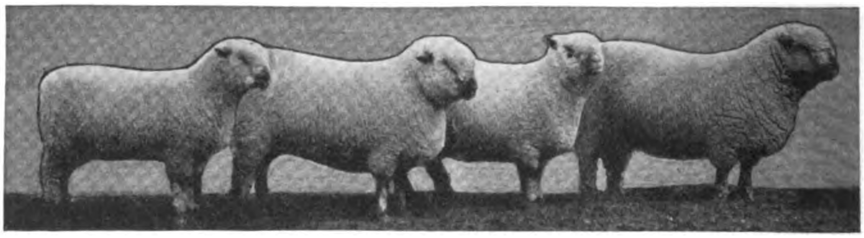
Breeds of Sheep

MERINO. The Merino is a fine-wooled sheep of little value for mutton. The wool is short, very fine and covers the entire body, also the face and greater part of the legs.

The fleece sometimes weighs a quarter as much as the sheep did before shearing. Authentic cases on record give the percentage of unwashed wool as high as 35 and 36 per cent of the entire weight.

Merinos are divided into different classes, and these have been given separate names. Also the general name, Merino, is qualified by prefixes, as American Merino, Australian Merino, etc.

AMERICAN MERINOS. Merinos were brought to the United States from Spain about 1790. The first importations were the little, wrinkly kind, with corkscrew horns and an oily, dirty fleece.



Prize Flock of Shropshire Ewes and Lambs

While the American Merino has a very fine quality of wool and helped our woolen manufacturers wonderfully, the carcass was so undesirable for mutton that the American people have formed a wrong opinion of mutton and do not know how to appreciate good mutton to this day.

DELAINE MERINO. This branch of the Merino family produces a grade of wool that easily lends itself to the combing process, whereby the fibers are combed parallel, which is a great advantage in certain kinds of weaves. The fleece fibers should be from 3 to 5 inches long. Rams are supposed to shear 15 to 25 pounds and ewes 10 to 15 pounds of unwashed wool.

THE RAMBOUILLET. This branch of the Merino family was imported by the French government from Spain more than one hundred years ago. They were carefully bred and fed with the purpose of improving the size.

The rams should average 180 pounds at maturity, and the ewes from 150 to 160 pounds. Individuals have been bred very much larger. Rambouillet mutton is accepted at par in most markets, but the old-time prejudice still follows the name Merino when it comes to mutton.

Mutton Breeds of Sheep

SOUTHDOWN. There are two types of mutton sheep generally designated as medium wool and long wool. The Southdown is a native of the southeastern part of England. Its original home was in Sussex County. The foundation stock was the native Sussex sheep, that "just growed," like Topsy, so far as history shows. The sheep, however, were very much improved by the English breeders, until a very valuable mutton and wool breed was produced.

Southdown sheep were brought to America in small numbers between the years 1803 to 1840.

The Southdown is what might be called undersized, but very compact in build. Mature rams weigh 175 pounds and the ewe 135. Southdown feeding qualifications are very satisfactory.

THE SHROPSHIRE. The Shropshire gets its name from the county of Shropshire, England, along the border of Wales. This is a good sheep country, and the early Shropshires had this advantage.

Shropshire sheep came to America in small numbers about the year 1855. They have become very popular and there probably are more Shropshire sheep in the United States than any other breed, except Merino.

This breed is rated as medium in the wool class, and is fine for mutton. It has no horns, and the best specimens are wooled from the nose to the toes. Mature rams should weigh about 225 pounds and ewes 150 to 160.

OXFORD DOWN. Oxford Downs get their name from Oxford County, England. This breed dates back to about the year 1833. The foundation stock was Cotswold rams and Hampshiredown ewes.

Different breeders worked along the same line, so that the type was quickly fixed and the honors were divided.

Oxford Downs closely resemble Shropshires, but they have brown faces and less wool on the legs. Still, this description is not reliable, because some Shropshires may be classified in the same way. The head of the Oxford Down is not wooled below the forehead. The ears are long and refined and free from wool.

In size, the rams should reach 200 pounds in weight, but some weigh as much as 400 pounds. Ewes weigh 175 and better. These weights make the Oxford Downs valuable as mutton sheep, especially when the superior mutton quality is considered. Oxford Downs shear heavy fleeces of combing wool, which is in demand.

HAMPSHIRE DOWN. The home of the Hampshire Down is in south central England. This breed also takes its name from the county from which it originated. Hampshires have dark brown heads and ears. This is a large sheep, almost as large as the Oxford Down. It is sometimes classified as the largest of middle

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A "Patio" Barn—Design A265L

This illustration offers something new in the arrangement of farm barns—a U-shaped layout. It is intended for the northern section of the country, where the winters are long and somewhat severe. Altogether, the two barns, sheds and *patio*, or square semi-enclosed barnyard, occupy a space 50 by 136 feet.

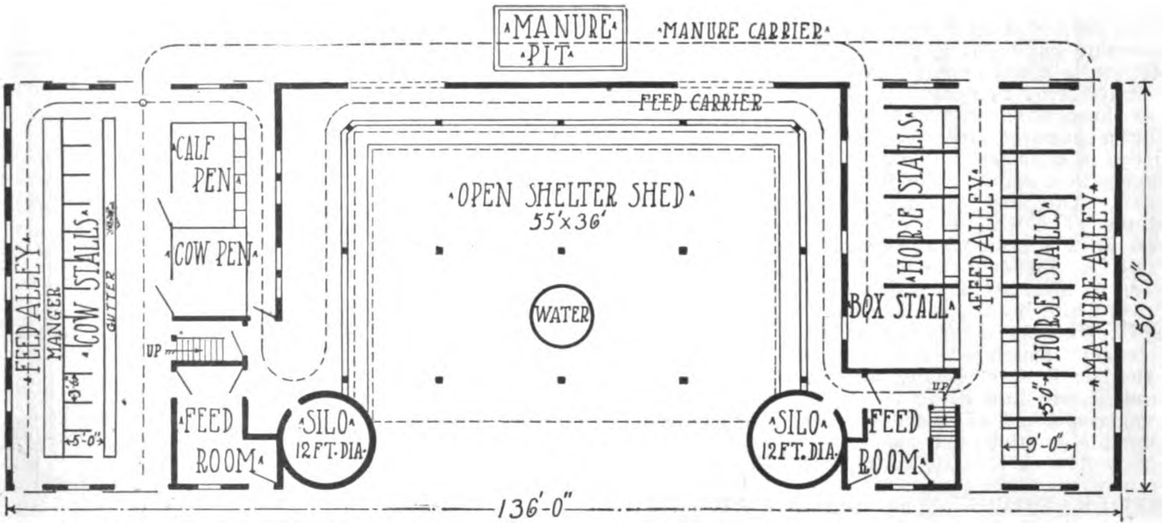
One barn is arranged for horses and the other barn is for cows, while the *patio* in the center is intended for exercising space for both. In experience, it would work out that the cows occupy this center space a good deal of the time. In fact, a great many dairy men have discovered the fact that cows may be cared for just as well in a shelter shed and that they are better off in many respects because of the freedom, exercise and fresh air.

This shelter shed is inclosed on three sides and the two silos close up the front opening within about 35 or 40 feet, and this opening is supposed to look towards the south.

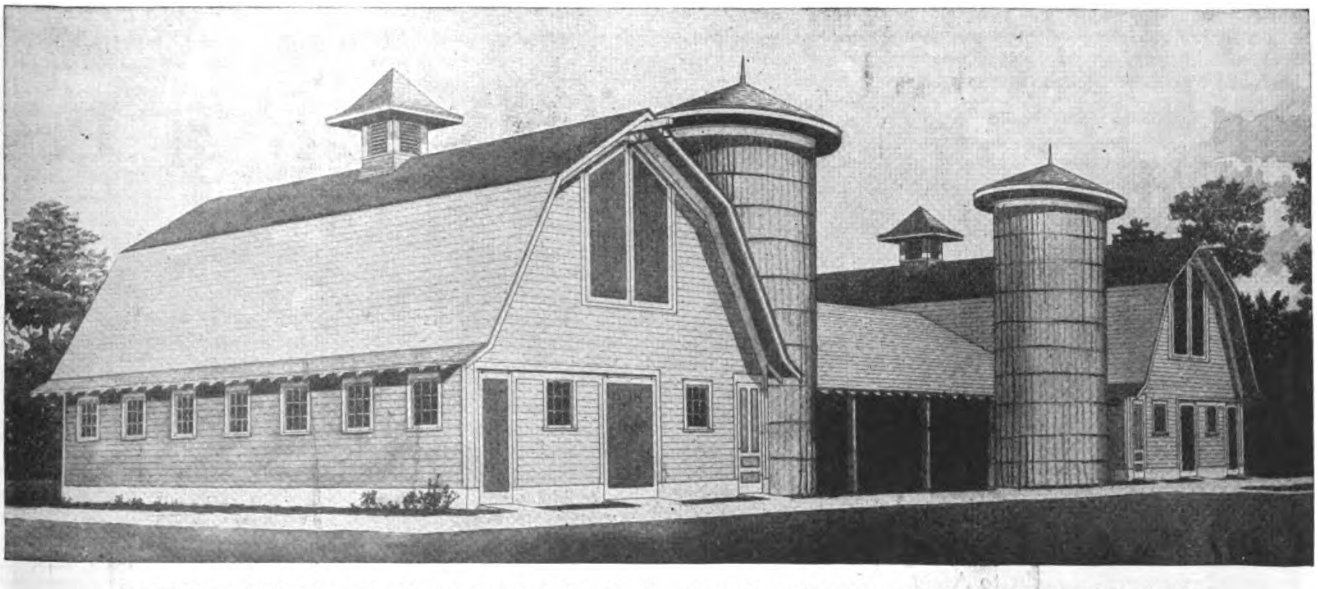
When beef cattle are kept instead of dairy cows, the plan works out just as well. The cows are stood in the stable at night and left until after milking time in the morning, while beef cattle are stood in the stable just long enough to eat their silage and grain. All roughage would be fed from the racks in the shelter shed.

The horse end of this building proposition is just as interesting as the cattle division. Both silos and all the feed alleys are connected by means of an overhead track and a feed carrier which runs everywhere, so that any kind of fodder or grain from the silo or feed rooms may be taken directly to any stall or any feed rack in the shelter shed. The plan offers a great variety of what may be called "machinery feeding."

One important feature is the water trough in the center of the open shelter shed, accessible to either horses or cattle without going outside. Because there is more or less dampness around the water trough, drainage must be provided to carry away the surplus.



Ground Floor Plan and Yard Layout of Double Stock Barn No. A256L



DOUBLE STOCK BARN ARRANGED IN U-SHAPE AROUND STOCK SHELTER SHED

A pair of 36 by 50-foot barns, one for cows and the other for horses. Between them is a well protected stock shelter shed; ground size of entire outfit, 136 by 50 feet. A system of overhead trolley feed and manure carriers serves all parts of barns and shed. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. When ordering, ask for Design No. A265L.

wool breeds. Mature rams should weigh 250 pounds, ewes close to 200. Individuals have weighed more than twice as much as these figures.

The length of fleece fiber is medium. The fleece weighs about 7 pounds, unwashed. Hampshires are fine looking sheep.

DORSET HORN. The Dorset sheep also originated in the southern part of England. It is said to be the only horned breed with white face and leg. Both the males and females of this breed have horns, those of the rams being spiral and those of the ewes curved outward and forward.

In size, the Dorset is medium, the rams weighing 200 pounds and ewes 165. Lambs are well liked in the markets, but the older mutton carcasses are not popular. The mutton might be considered of medium quality. Dorset Horns excel in fecundity; the ewes sometimes produce twice a year, often twins and sometimes triplets.

CHEVIOT SHEEP. The honors of the origin of this breed are divided between England and Scotland, as the early flocks roamed back and forth across the border of the two countries, in the section known as Cheviot Hills. The climate is moist and the weather rough and stormy in winter.

These sheep have bred in this section for a hundred years or more. The fleece is considered middle wool combing, with a staple about 4 inches in length. The size of the Cheviot is medium. The weight of the rams is given at 200 pounds and ewe at 150. The Cheviot is a compact, heavy sheep for its size. It has a bald face and clean, white legs.

The Cheviot, as a grazing sheep under fence, is superior, and it is a great rustler; if there is any feed to be found, it will find it.

They are prolific as breeders, but objectionable on the open range, because they do not feed in flocks, but scatter in every direction.

SUFFOLK DOWN. This breed came from the chalk hill clay lands of Suffolk and neighboring counties. The origin is ancient. It is a large sheep, nearly equal in size to the Hampshire. Mature rams sometimes weigh 230 to 240 pounds, and ewes 200 and upward. It is a mutton sheep of high rank. As a wool producer it is not a great success, as it is not a heavy shearer.

TUNIS SHEEP. These are known as the fat-tail sheep of northern Africa, coming from the French province of Tunis. Specimens of this breed were brought to America one hundred years ago. It is a superior mutton sheep, but apparently has no other special reputation. It is objectionable for a breed, from the fact that it does not come true to any particular type.

LEICESTER SHEEP. The county of Leicester, in England, furnished the original stock for this breed. Close breeding or inbreeding has fixed the present type very thoroughly.

Leicester sheep have clean, white faces and legs, although the wool may reach to the knees and hocks. Leicester sheep were brought to America in 1800. In size, the Leicester is the smallest of the long-wool breeds. But it is almost too large to be popular for mutton. Mature rams weigh 225 pounds and ewes 175 pounds, although in some localities the weight is somewhat heavier. Leicesters have a fine grade of long wool. The fleece should average from 9 to 11 pounds in weight.

COTSWOLD. Cotswold is one of the largest breeds, being nearly, or quite equal to the Lincoln in size. A mature Cotswold ram should weigh 250 to 280, ewes 200 to 225; individuals sometimes weigh much more. It is not considered a very valuable mutton sheep, but the lambs are well liked. The Cotswold is a good grazing sheep on level ground. As a wool producer it is not well liked, as the fleece has a tendency to coarseness. The staple is very long, sometimes reaching 15 inches in length. The weight of fleece is about 10 pounds. It is a fine looking sheep and adds greatly to the appearance of a farm.

LINCOLN SHEEP. Lincoln sheep originated in Lincolnshire, on the east coast of England. It is a large, coarse type of sheep, having white face and legs. It is the largest of the British breeds. The rams sometimes attain a weight of 400 pounds; the average of one lot of ewes was 275. It is considered too large for a good mutton sheep, but the lambs are well liked.

Lincolns are good feeders and produce considerable wool. The length of the Lincoln wool fiber will sometimes reach 20 inches. At least 8 inches is required by the Lincoln Breeders' Association. Large rams sometimes shear 30 pounds.

ROMNEY MARSH SHEEP. Romney Marsh sheep come from the county of Kent, in a marshy country. This breed has not traveled very much. It is well liked in the district where it has developed, but very few have come to America.

HIGHLAND SHEEP. Black-faced Highland sheep belong to the hills of Scotland, in the hills of Perth and Dumbarton. The origin of this sheep is unknown. It is a good rustler and knows how to take care of itself in its native hills. Both sexes have horns. They all have black faces.

ANGORA GOATS. The Angora goat comes from Asia Minor, where the rainfall is uncertain and the climate has a great variation of heat and cold. Angora goats were brought to the United States in 1849. The principal value of Angora goats is their Mohair fleece and their propensity for clearing old slashings from brush and sprouts.

MILK GOATS. While the milk goats are popular in European countries, there are few in America, although the number is increasing. There are a number of milk goats bred, principally in Switzerland, the best known being the Toggenburg. Quite a number of this breed are making good records in this country.

Sheep in Winter

You don't need to stable sheep. They are the best fresh air cranks we have ever gotten acquainted with. The only house a sheep has any use for is an open shed that backs toward the north wind.

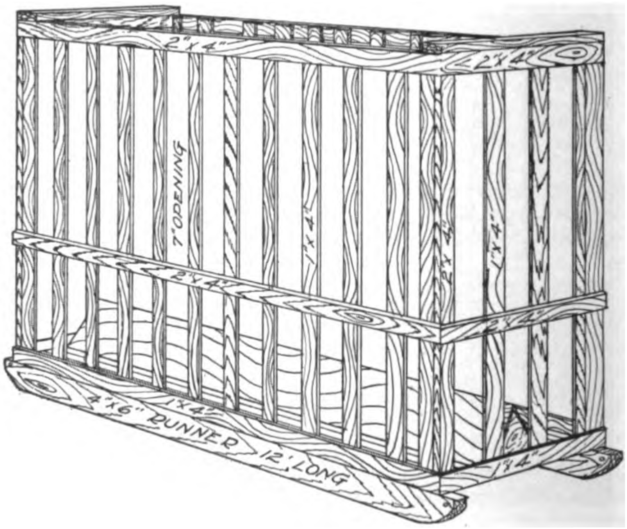
If there are evergreen trees to break the force of the wind, it don't make much difference whether the shed has a back or not. In sheltered places all the shed necessary is a roof to keep the rain off.

Sheep suffer from rain when it wets the fleece. They suffer from ground dampness when they lie down.

Sheep need alfalfa or clover hay and silage in winter.

This brings us to the feeding rack proposition.

The illustration shows a feeding rack 4 feet wide at the top and from 4 feet 2 inches wide at the bottom. A slight flare out is necessary to let the hay slip down as it is fed out at the bottom. It may be any length, but 12 feet is as heavy as it ought to be to move easily after it gets buried a few inches in manure. Runners are built under it, so it may be hauled away to the feed lots.



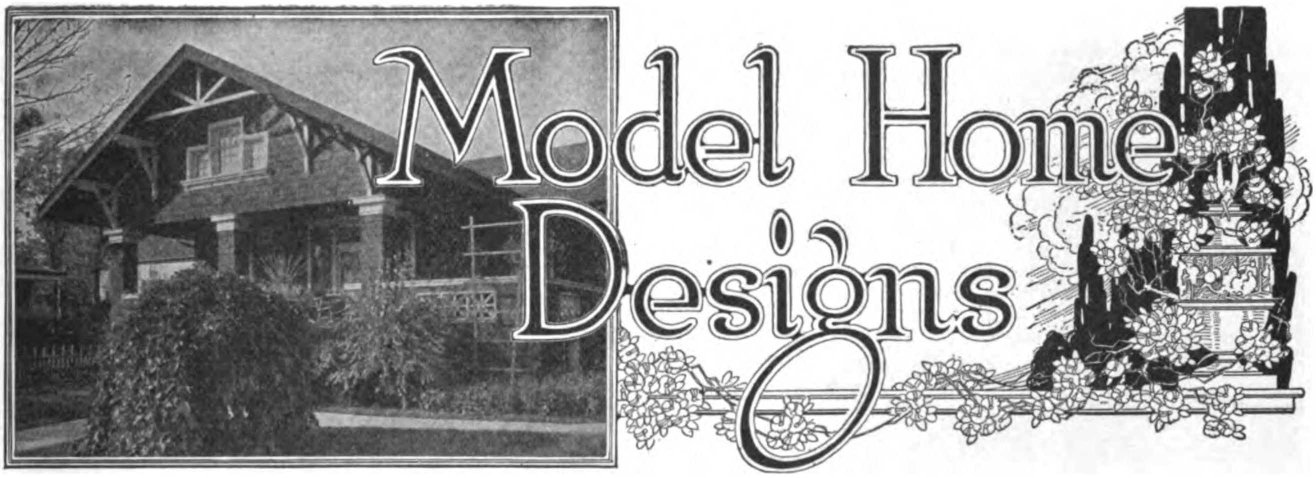
Handy Sheep Feeding Rack

For economical feeding, sheep must have a feeding rack with slats far enough apart so they can put their heads through; 7 inches wide is about right. Sheep will stand and eat quietly with their heads in the hay, but if obliged to pull the hay out from a narrow opening they will walk away with a mouthful and spill half of it and walk over it.

Sheep won't eat hay that has been tramped on or run over. They are the most particular feeders of all domestic animals .

There is a solid double trough bottom to the feeder to catch the leaves of clover and alfalfa. Sheep will pick up the leaves that shatter off if they are kept clean. This trough has a raised center, roof fashion, to slide the fine stuff over within reach. This raised center also helps to stiffen the rack and it makes the feeding of grain easy.

Sheep should have a light feed of grain once a day, with alfalfa or clover hay. One feed a day of silage is good for sheep. The trough makes a good silage feeder.



Model Home Designs

Farm Homes and Suburban Dwellings for Every Taste

Farm houses, like clothing, should be selected to fit person, purse, climate and occupation.

Some farmers need room for a large family. Others have social ambitions.

Sometimes a dairy is wanted in the basement, which requires a rear cellar entrance of generous proportions.

A great deal depends upon the kind of farming.

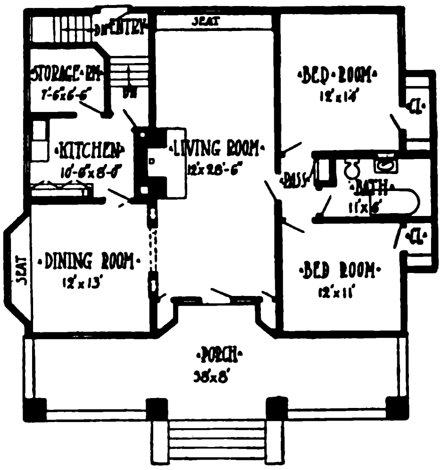
This department contains a great variety of house plans, designed to meet many different situations. And there are many more where these sample plans were manufactured.

Bungalow with Central Living Room

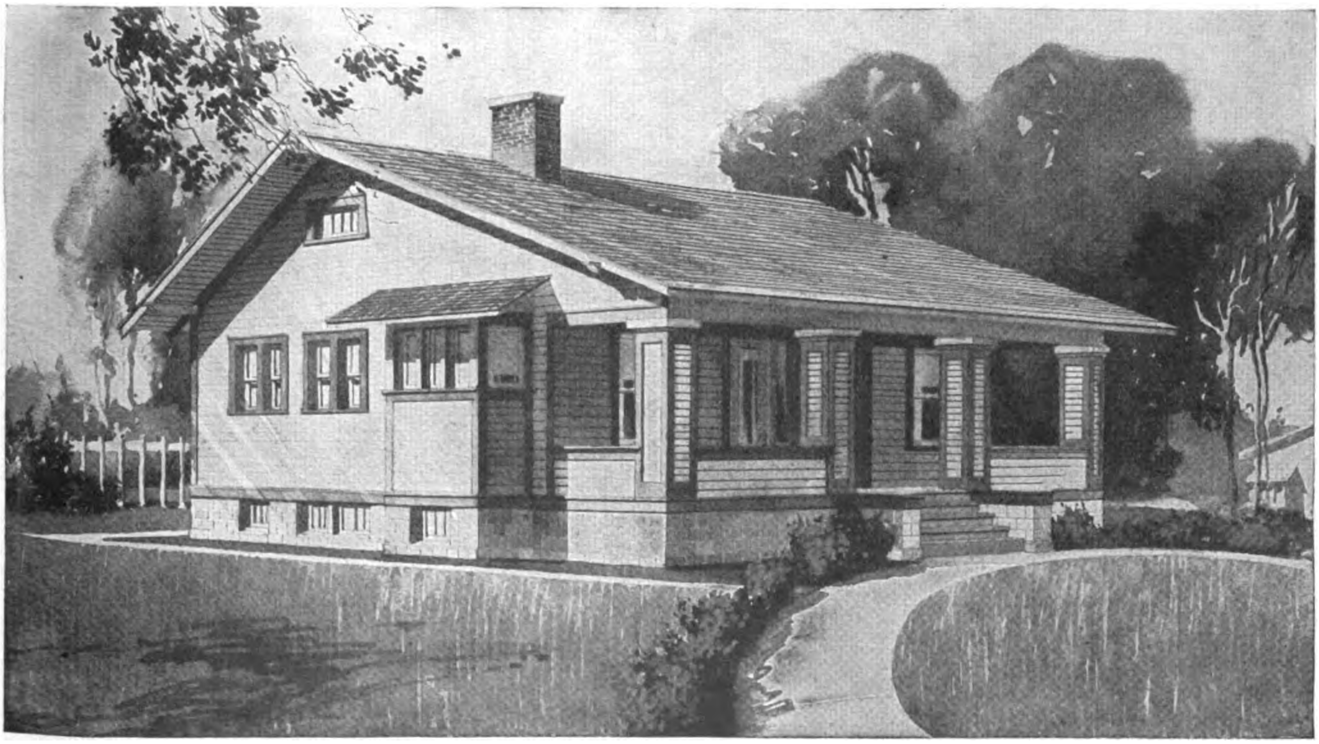
A plain little bungalow from outward appearance develops into a modern, up-to-date house of five rooms when you open the front door. An interesting feature of this plan is the 12 by 28 foot living room. It is built like a hallway through the center of the house. This splendid room is lighted principally from the rear, as the whole end of the room is practically one big window.

The front entrance being recessed, adds to the attractiveness of the front, besides giving two convenient closets for coats, umbrellas, etc. The blank partitions in this room provide for placing large articles of furniture to the best advantage.

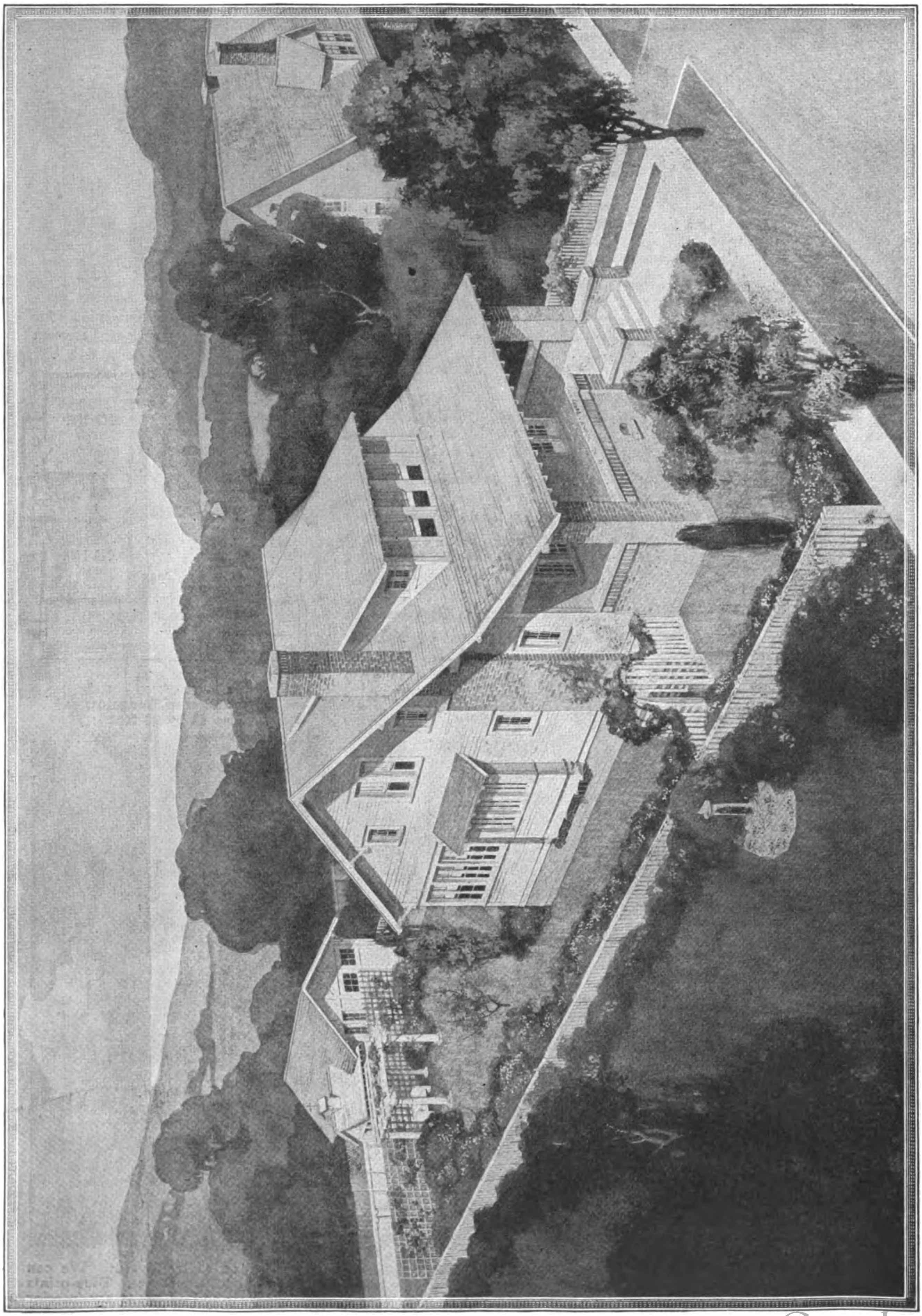
Living rooms and bed rooms are separated in this bungalow as effectively as houses having up and downstairs, an arrangement that will appeal to every housewife. One chimney, with three flues, almost in the center of the house, furnishes smoke accommodation for three fires—the kitchen range, basement furnace and grate.



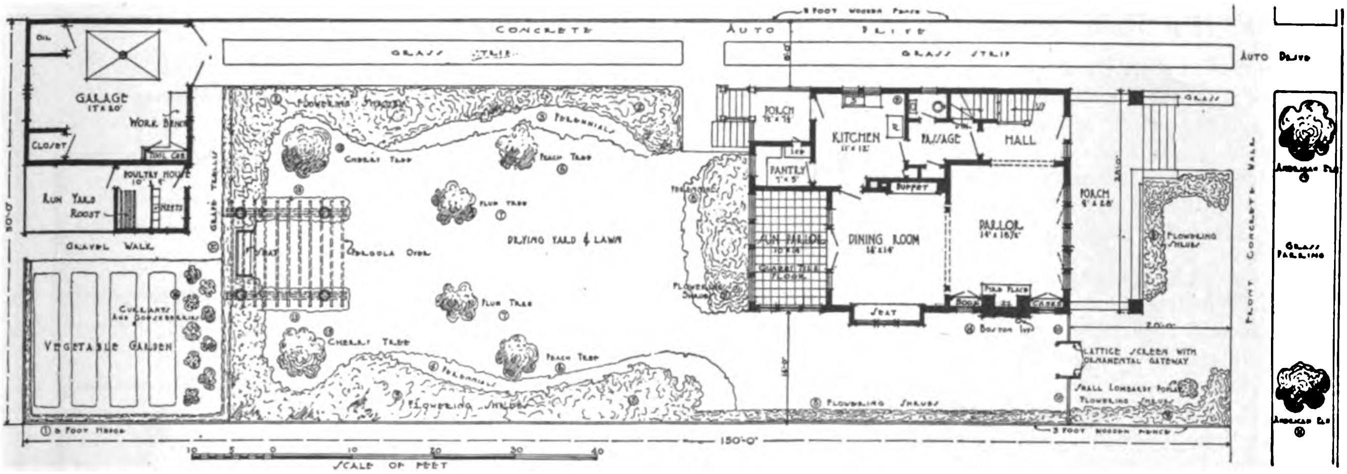
Floor Plan of Bungalow
Size 41 by 33 feet



A low cost, popular style bungalow, comprising some very interesting features. Size, 41 by 33 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6612L.



General view of model bungalow Design No. 6605L on an average size building lot—showing how any yard can be made beautiful at small cost. A 50 by 150-foot lot with seven-room bungalow. Floor plans are shown on opposite page. Size on ground, 28 feet by 40 feet. We can furnish complete set of blue-printed working plans and typewritten specificatins for only $8.00 per set. Blue-prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6605L.



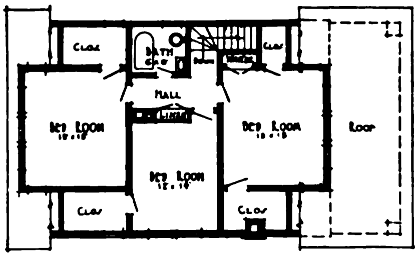
Ground plan of view shown on opposite page—Bungalow Design No. 6605L, placed on a 50 by 150-foot lot.

Model Bungalow with Simple Landscape Gardening on 50-Ft. Lot.

"An attractive home with all modern conveniences, of average size, and at a cost within reach," were the directions given our architects for this model modern style bungalow.

They have designed a seven-room, story-and-a-half bungalow, measuring 28 feet in width. It goes nicely on a 50-foot building lot, with plenty of room for a driveway along one side, and 14 feet of green grass, shrubbery, and sunshine along the other.

This bungalow embodies all desirable features. The parlor, or living room, and the dining room are large and extremely well lighted. Sun parlor with red tile floor opens off the dining room. The kitchen is just the right size and has openings on two sides, insuring coolness and good air.



Second Floor Plan of Bungalow

The pantry is large enough for use, is away by itself where it can be kept cool, and gives space for refrigerator with outside icing door. There is a lavatory on the main floor; also clothes chute from kitchen to basement.

On the second floor are three extra large bedrooms, each one with a lighted and ventilated clothes closet. All the way through, this dwelling is up-to-date as to windows—the amount of light and ventilation secured. In both front and rear bedrooms there are windows on three sides. This will make these rooms comfortable in hot weather even though they are up under the roof with very little attic space above.

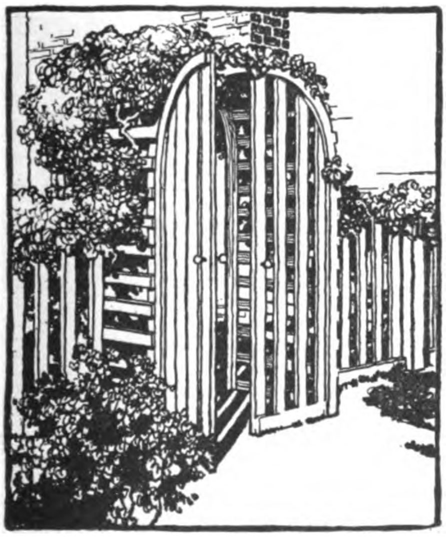
A glance at the floor plans will show all of these desirable features. There is a built-in case of drawers for linen in the upper hall, and an extra wardrobe in the front bedroom.

Figuring this bungalow at 15c per cubic foot, a conservative figure, the total cost of construction in $3,757.20. For this price one ought to be able to build as called for in the specifications, using oak floor and trim for the important rooms downstairs, and maple floors and birch trim upstairs. Cellar gives laundry, cold room, etc.

Beautifying an Average Building Lot at Moderate Expense

From a business point of view it is worth while to beautify the home grounds, as nothing adds more to the value of property, both in appearance and actually, than a pleasing arrangement of trees, vines and shrubs.

In landscape gardening, each individual case demands a different treatment. No place is so small that it cannot be made more attractive.



Ornamental gate in lattice screen. A very artistic feature in itself, and valuable because of the extra privacy it gives the side and rear yards.

The well known slogan of "an open lawn and a heavy border plantation" expresses what high-light and shadow accomplish in the composition of a picture. In other words, contrast is the first essential. Many places that would otherwise be beautiful, lack this quality because—to use a common expression—the grounds are "cluttered up" with a collection of many kinds of trees and shrubs planted haphazard.

The successful plan will beautify in two ways—by developing pleasing effects, and by shutting off jarring features of the landscape. Thus, the planting properly done, will serve to frame and make prominent the most attractive views of vistas, soften the hard lines of architecture, and adorn barren spaces. The skyline will be broken, and shadows thrown on roof and wall by the judicious arrangement of tall trees.

Shrubs massed around the house will soften the foundation lines; they may also be used to screen the grounds from the inquisitive gaze of passers-by, or to hide the vegetable garden. Unbeautiful objects, also, such as the rear of a neighbor's premises, or portions of one's own grounds devoted to domestic purposes, may be concealed from view or rendered less obtrusive to the eye, by the use of shrubs which in every situation will please with their foliage and blossoms.

The plot plan above shows a desirable scheme for planting on an average size building lot. It can be used with this design or any other.

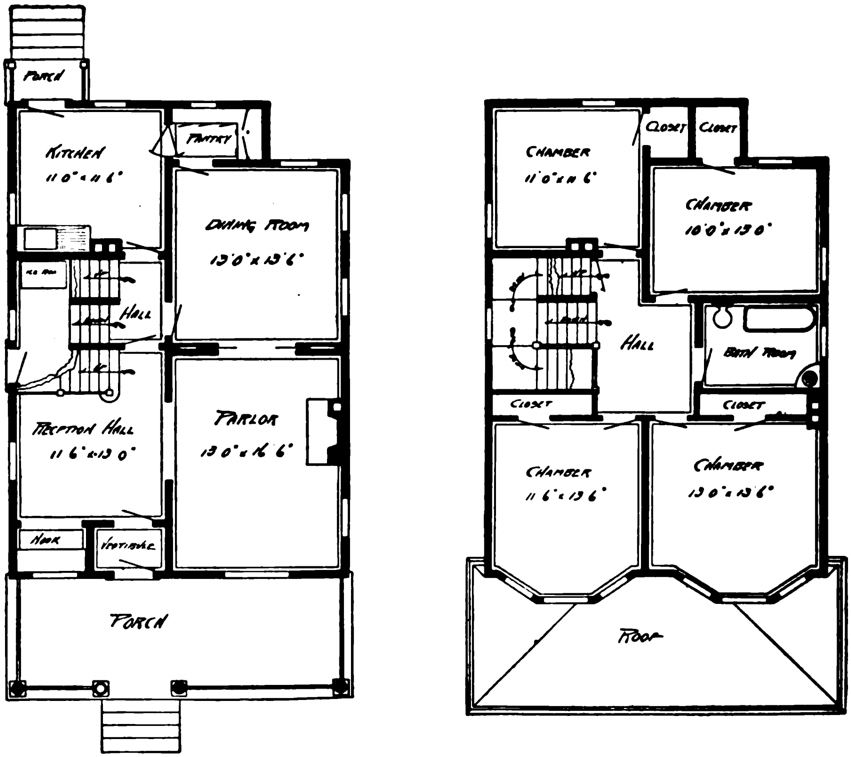
A four-column pergola; grape trellis at the back. A pergola of this style costs about $35, and adds the touch of beauty to any yard.

Sensible Hip Roof Residence

The man who wants a good home and wishes to get the full worth of his money picks out a straightforward house plan like this one, without towers and angles or cut-up fancy work that runs up the cost. He gets a stylish looking, attractive residence, too.

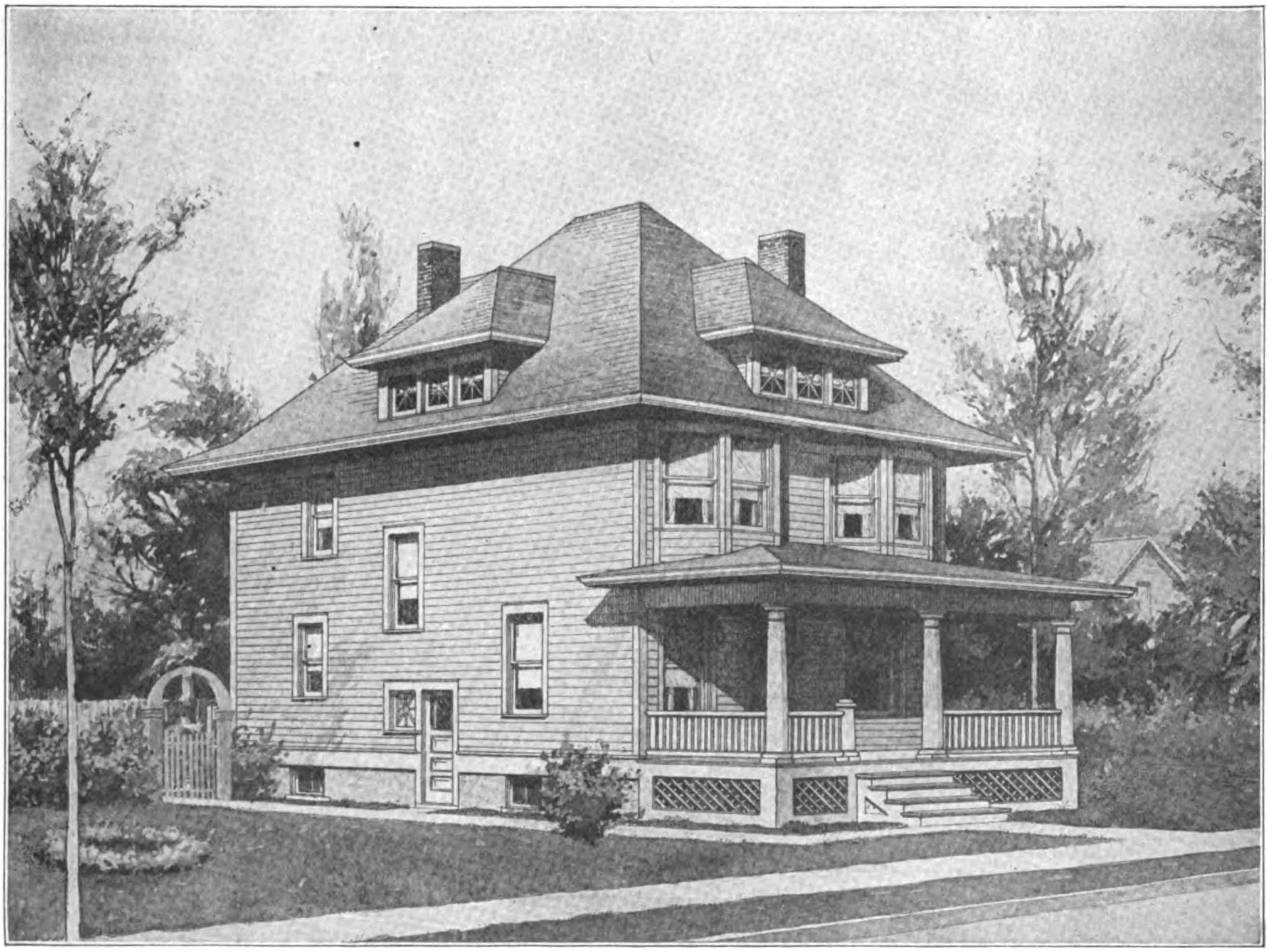
This is an eight-room house with four good sized bedrooms and a bathroom on the second floor. Some space in the attic could also be utilized The rooms are laid out conveniently. There are front and back stairs coming together at the landing. The side door is a grade entrance opening onto the cellar stairs.

The kitchen is handy to the dining room and to the front door, yet is well insulated from the rest of the house in order to confine the cooking odors and to keep the kitchen noises from annoying the rest of the household. The reception hall is of generous size and can be made very hospitable. It connects with the parlor through a broad cased opening. This and the dining room are large rooms.

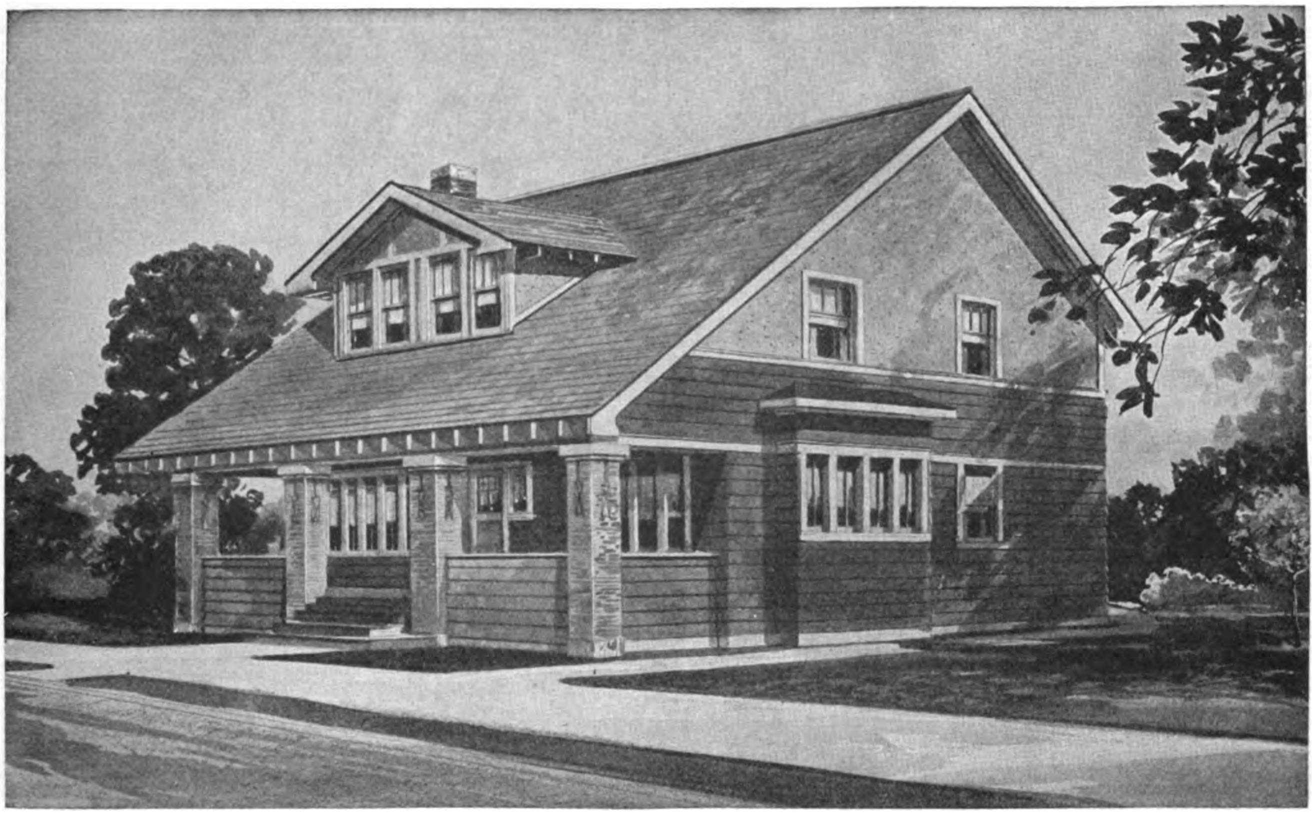


First Floor Plan **Second Floor Plan**

Arrangement of Economical Eight-Room House. Size, 26 by 36 Feet 6 Inches



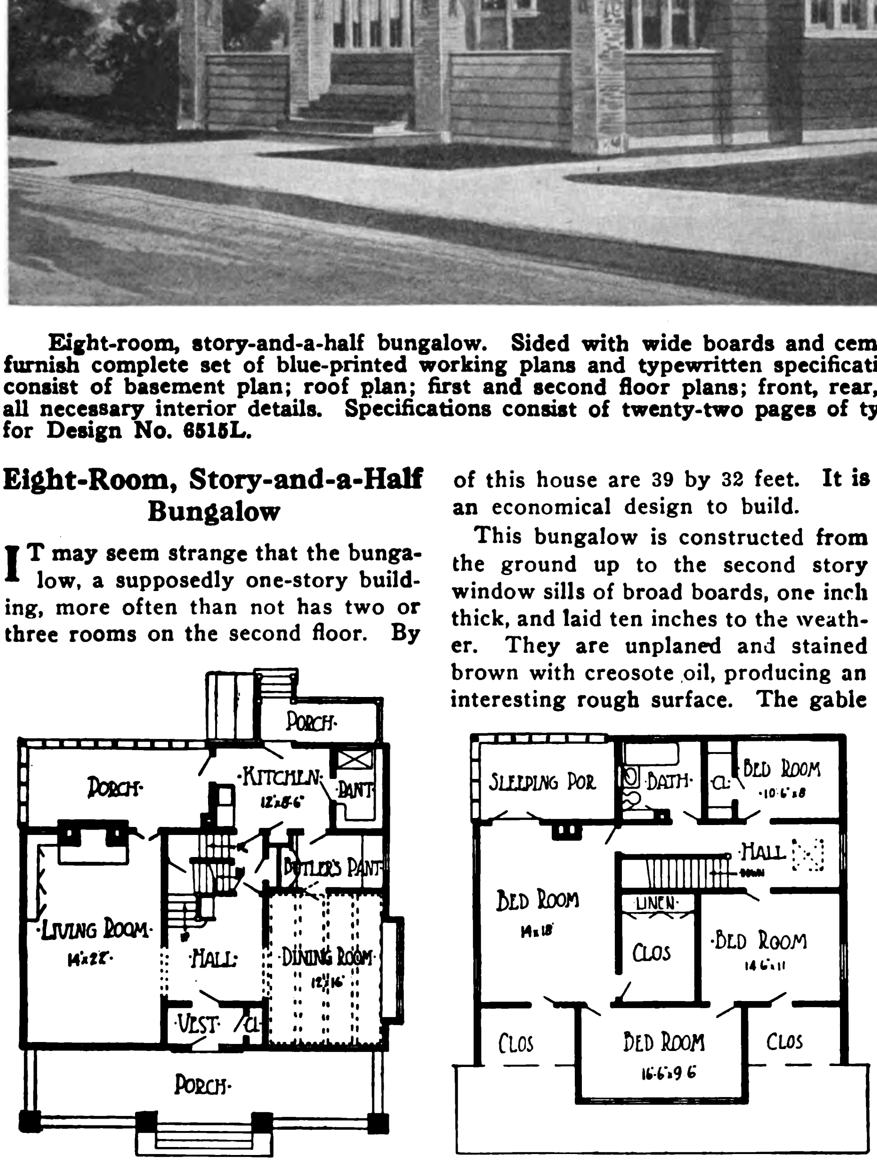
A very economical house to build. Eight-room, frame construction, hip-roof design. Size, 26 by 36 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6554L.



Eight-room, story-and-a-half bungalow. Sided with wide boards and cement plaster. Size, 39 by 32 ft. We can furnish complete set of blue-printed working plans and typewritten specifications for only $9.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6515L.

Eight-Room, Story-and-a-Half Bungalow

IT may seem strange that the bungalow, a supposedly one-story building, more often than not has two or three rooms on the second floor. By working them in "under the roof" some nice rooms are procured without much extra cost. In the design illustrated on this page there are four large rooms on the main floor, and four more up stairs. The total dimensions of this house are 39 by 32 feet. It is an economical design to build.



First Floor Plan **Second Floor Plan**

Arrangement of Eight-Room Bungalow, Size 39 by 32 Feet.

This bungalow is constructed from the ground up to the second story window sills of broad boards, one inch thick, and laid ten inches to the weather. They are unplaned and stained brown with creosote oil, producing an interesting rough surface. The gable ends of the bungalow and the sides of the roof dormer are covered with yellow cement plaster. The square porch pillars are built up of dark brown rough texture brick which harmonizes well with the creosoted boards. The window frames, cornices and rafter ends are painted white.

This is a design that has been very popular. It carries a feeling of cordial hospitality and hominess.

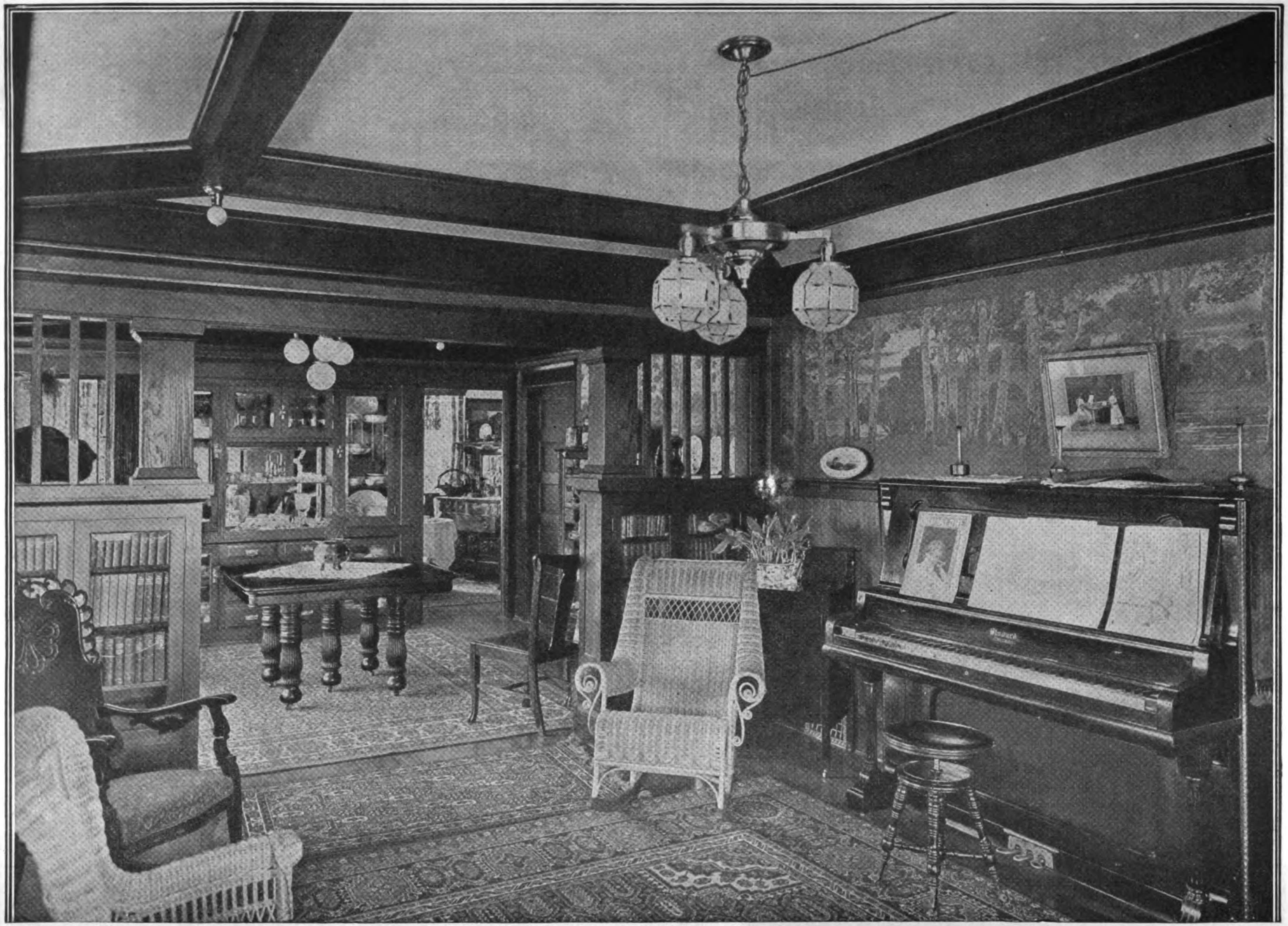
A glance at the floor plans will show the desirable arrangement of the interior. The rooms are large, the big living room with its screened porch being one of the specially attractive features.

As in all true bungalows, there are a good many pieces of built-in furniture provided for.

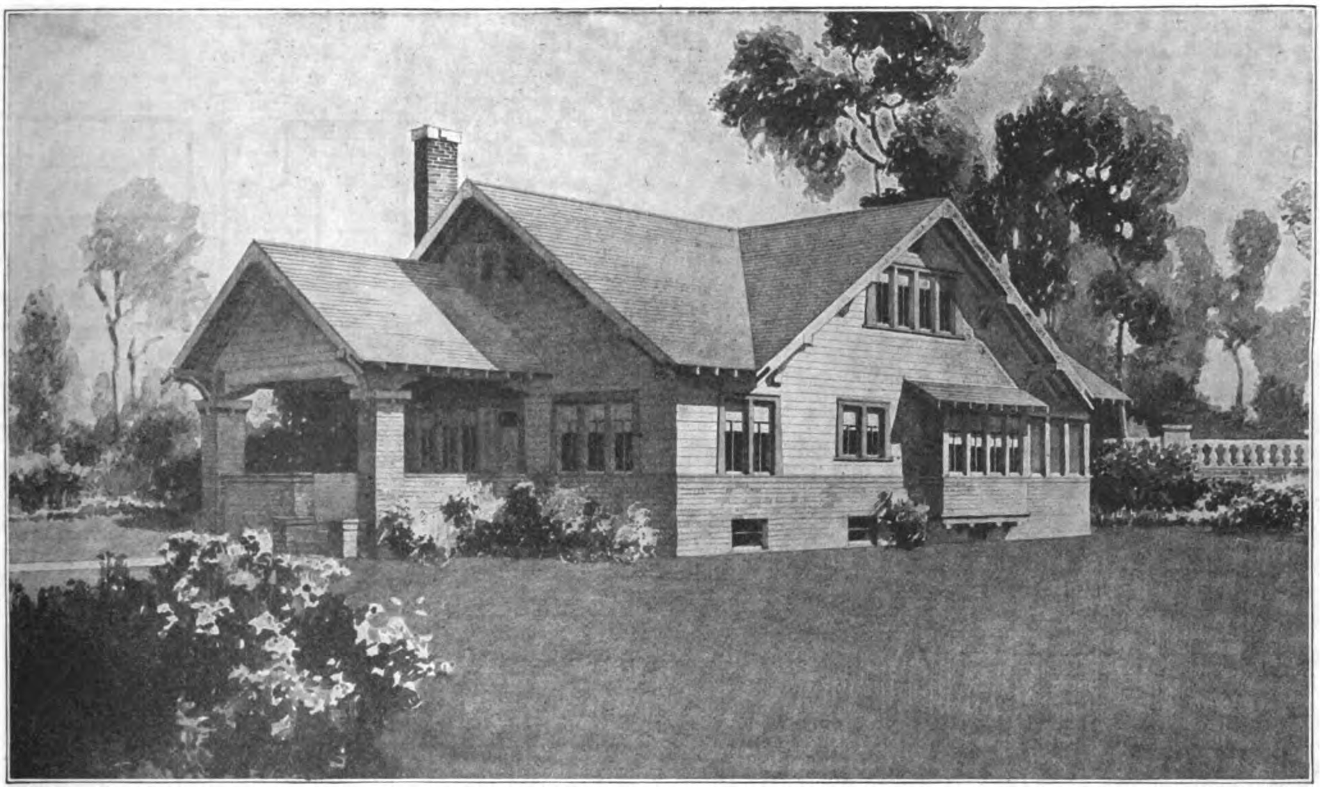
The entrance from the broad front porch is at the center into an outer vestibule and from there into a square reception and stair hall. At the left is the large living room, and at the right. the dining room. Ceiling beams are indicated for this apartment.

Directly back of the dining room is the butler's pantry, and back of that, the kitchen and supply room. The refrigerator in this room is placed so that it can be iced from the back porch. The iceman doesn't need to track across the kitchen floor.

The stairway shows a good arrangement; a stairway going up from the back hall joins onto the main stair half way up. On the second floor are four good sized bedrooms, besides a sleeping porch. An ample amount of clothes closet space is secured.



A modern home interior full of suggestions and good ideas. Spaciousness is the keynote. Living room is separated from the dining room only by "Bookcase Colonnade." The rich landscape panel decoration adds to the feeling of size of these rooms. No money spent in interior decorations goes further than in one of these wall paper landscape friezes. The beam ceiling work and placing of the lighting fixtures should be noted.



Seven-room bungalow. Size, 33 by 47 feet. Siding is of wide boards; foundation courses and porch pillars brick. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. Ask for Design No. 6541L.

Seven-Room Brick and Wide-Boarded Bungalow

Here is a very home-like dwelling of the western bungalow type. The foundation courses up to the window sills are of brick; above, wide resawed boards are used. These are laid about 8 inches to the weather and have a rough surface which takes a stain, brown or dark green, very nicely, producing a rich, warm appearance.

The trim around doors and windows and around the cornice is stained or painted in a color contrasting with the rest of the house. There is a chance for a very artistic effect in this bungalow by properly choosing the colors for brick work, siding, and roof.

The interior of this bungalow is typical of the best modern arrangement. The living room is large, 14 by 19 feet, and connects freely with the dining room through a broad colonnade opening. The dining room measures 15 by 17 feet. Both of these apartments are elegantly finished with ceiling beams, arranged in an ornamental way.

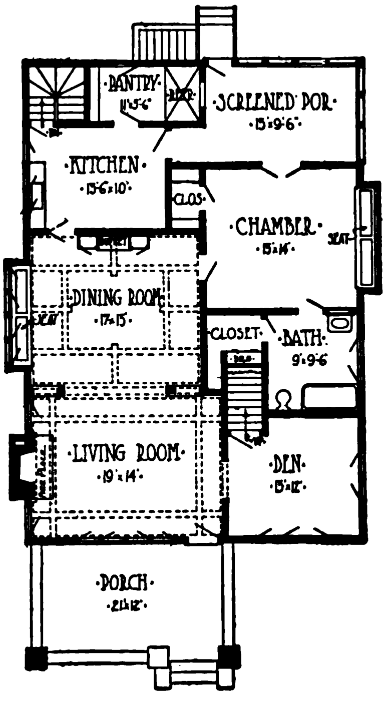
The kitchen is well placed and is just the right size for easy housekeeping. The pantry has a place for built-in refrigerator, to be iced from the porch. The cellar stairs, down to the fruit and vegetable cellar, open handily from the kitchen.

This design is popular because of the fine down-stairs bedroom from which opens the screened porch. One who has ever slept in a screened porch room will never be satisfied with any other.

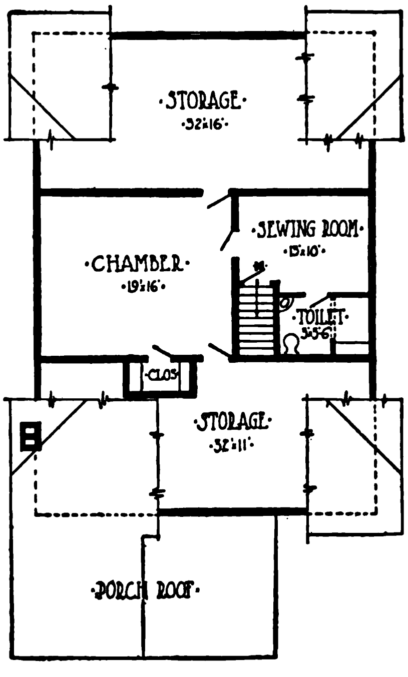
The bathroom opens from the downstairs bedroom, and is of generous size. Note the two large closets on this floor.

Opening from the living room is a comfortable den or library 12 by 13 feet. The stairway goes up from here. On the second floor are one large bedroom, a smaller room, designated "sewing room," toilet, and two large storage rooms.

An exceptional amount of good, usable living space is secured in this dwelling for a bungalow of its dimensions. For a building lot of 40 feet or more, nothing could be better.

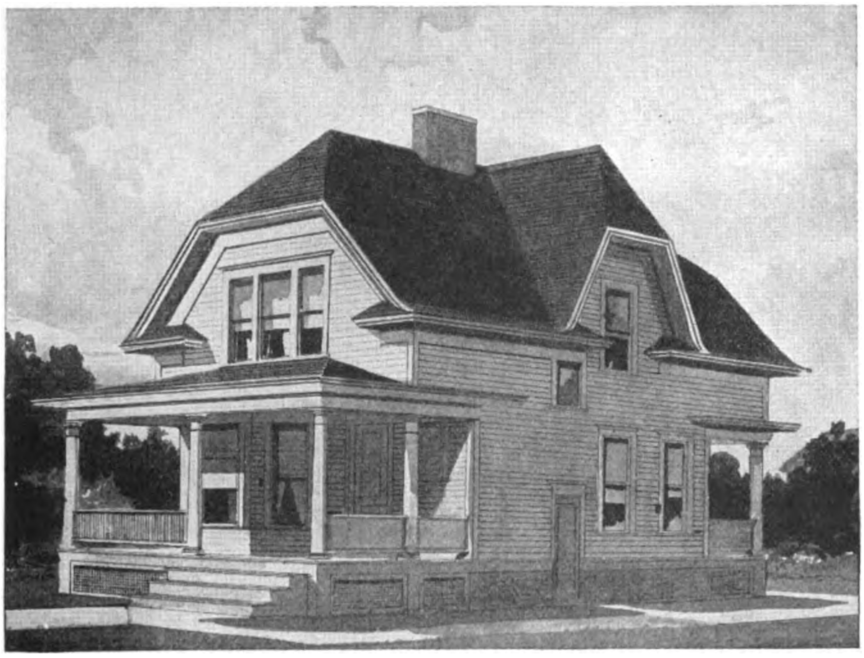


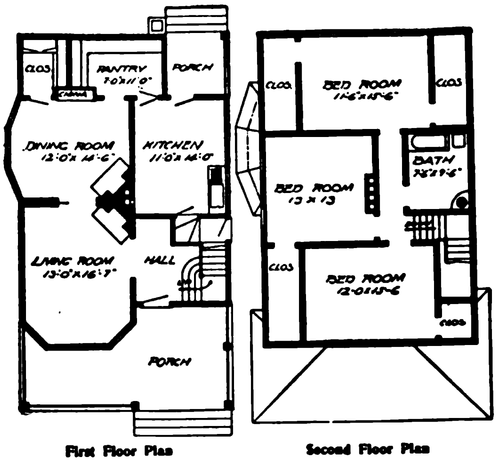
First Floor Plan



Second Floor Plan

If your neighbor is going to build tell him about this book—and do both him and us a good turn.





First Floor Plan Second Floor Plan

Six-room, story and a half house. Size, 27 feet wide by 38 feet in length, exclusive of porch. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevatios; wall sections and all necessary interior details. Specifications consist of about twenty-two pages of typewritten matter. When ordering, ask for Design No. 2017L.

Six-Room House—Design 2017L

A distinctive appearance is given to this house by the manner in which the gables are treated. Design 2017L gives the lay-out of a very comfortable six-room house. Six rooms and and a bath, two fire-places, a splendid dining room with china closet and an extra good pantry are unusual in a small house.

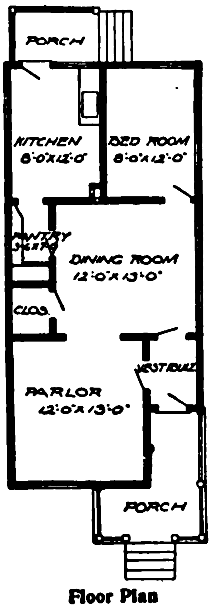
There is a grade entrance at the side of this plan that offers great conveniences if the owner makes much use of the cellar. There are a few steps up from this entrance into the kitchen and a few steps down into the cellar. The intention is to make a convenient way out and in, either from the cellar or the kitchen.

Altogether, this plan is very neat and well arranged, and it makes a very comfortable house.

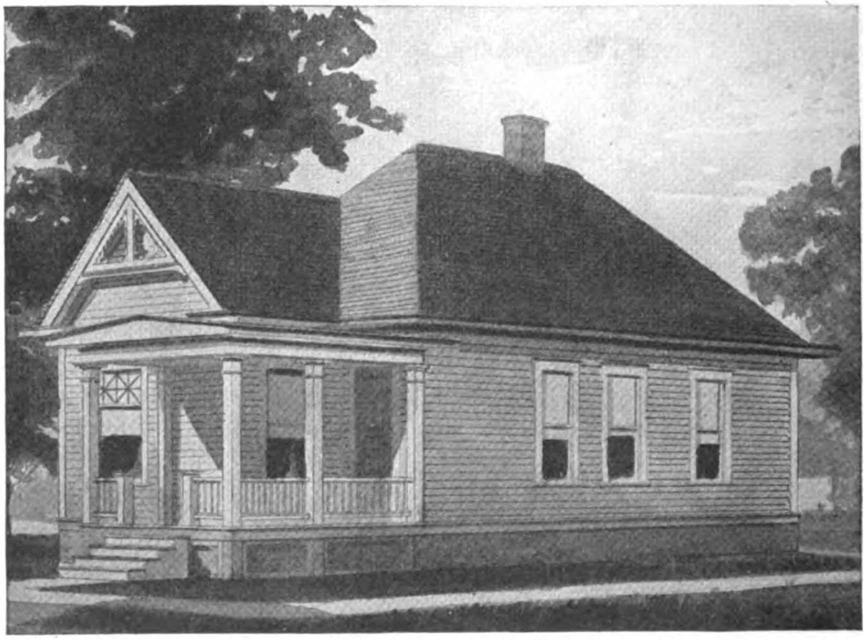
Four-Room House—Design 2002L

When four rooms are sufficient, they may be had by building after Design 2002L. In communities where land is not too valuable, houses like this are much better and more economical than crowding into flats. Transportation will decide whether a person can live in a suburb or not, but this design is interesting for young people starting housekeeping if they can possibly arrange to build it.

The size is 18 feet by 39 feet. An 18-foot house may be put on a narrow lot. A great many young folks get their start in life by building a small house on a comparatively cheap lot, which may be paid for on the "inducement" plan.



Floor Plan

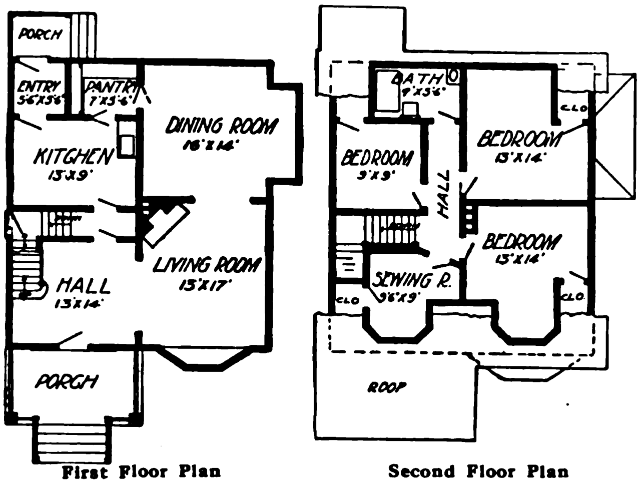


Narrow four-room house, 18 feet in width by 39 feet in length is shown in this design. For a narrow lot it offers the advantage of four rooms with only 18 foot width of building. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00. Blue-prints consist of foundation plan; roof plan; floor plan; front, rear, two side elevation; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewriten matter.. When ordering, ask for Design No. 2002L.

The Gambrel Roof Design

IF skillfully planned, there is no prettier type of house than the one with gambrel roof. It is also economical. All of the space "up under the roof" is usable.

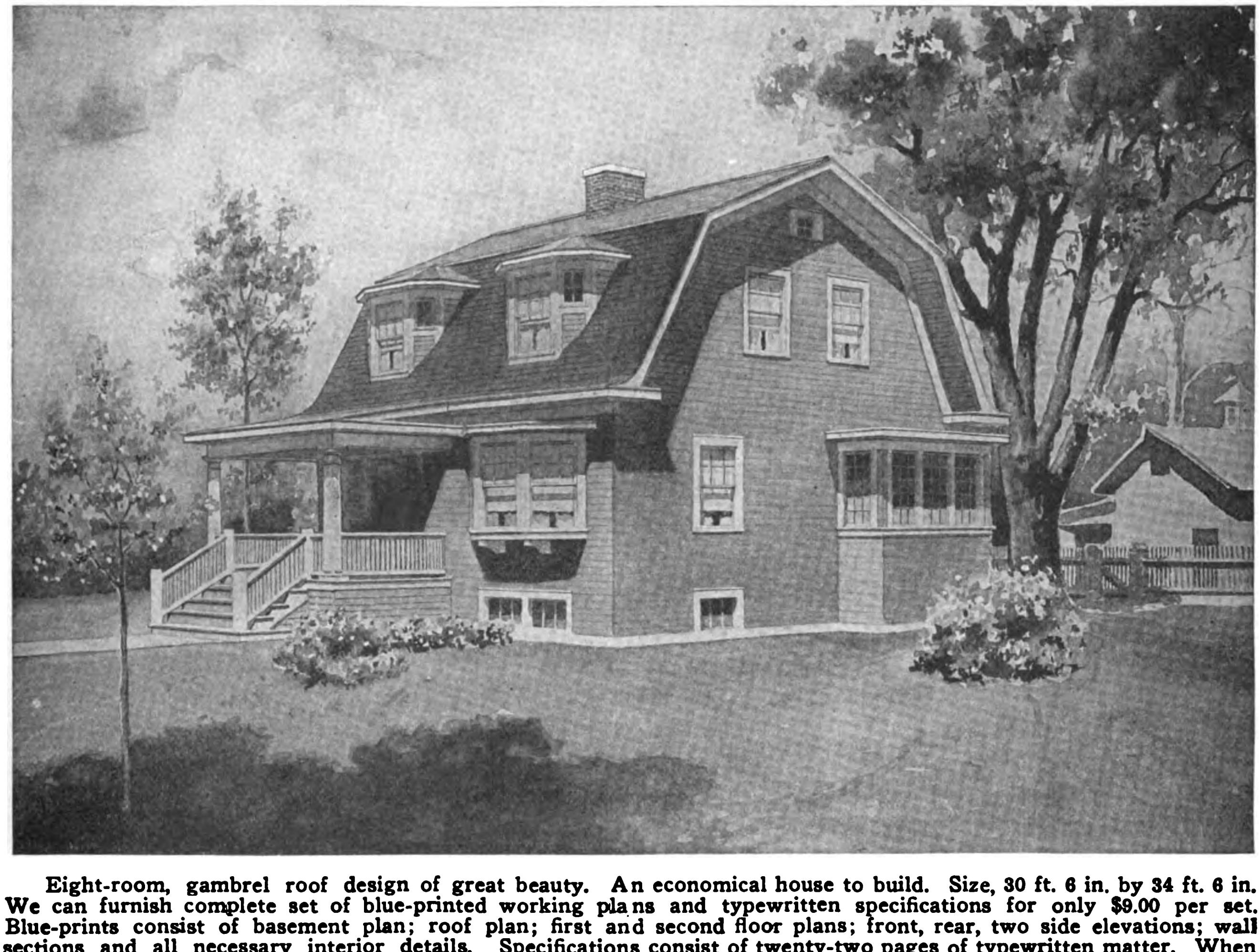
Take this design illustrated on this page, for instance. It is 30 feet 6 inches in width and 34 feet 6 inches along the depth of the lot. It contains eight good rooms. It is a solid frame house, finished upstairs and down in cypress, and with oak floors down stairs and yellow pine edge grain upstairs.



First Floor Plan Second Floor Plan

Arrangement of Gambrel Roof House, Size 30 Ft. 6 In. by 34 Ft. 6 In.

We have seen many gambrel roof buildings that are scare crows—roofs seem to be proportioned in a top-heavy sort of way. It is a style that doesn't work well for amateur architects and carpenter designers. Just a little change in the roof slopes and it is all off. Notice how this building is designed. The octagon bay window at the front in the living room, and the two octagon dormers are in exact harmony with the gambrel roof idea. This is one of the secrets of good architectural work; when planning your home, keep all parts in harmony, all following some one style.



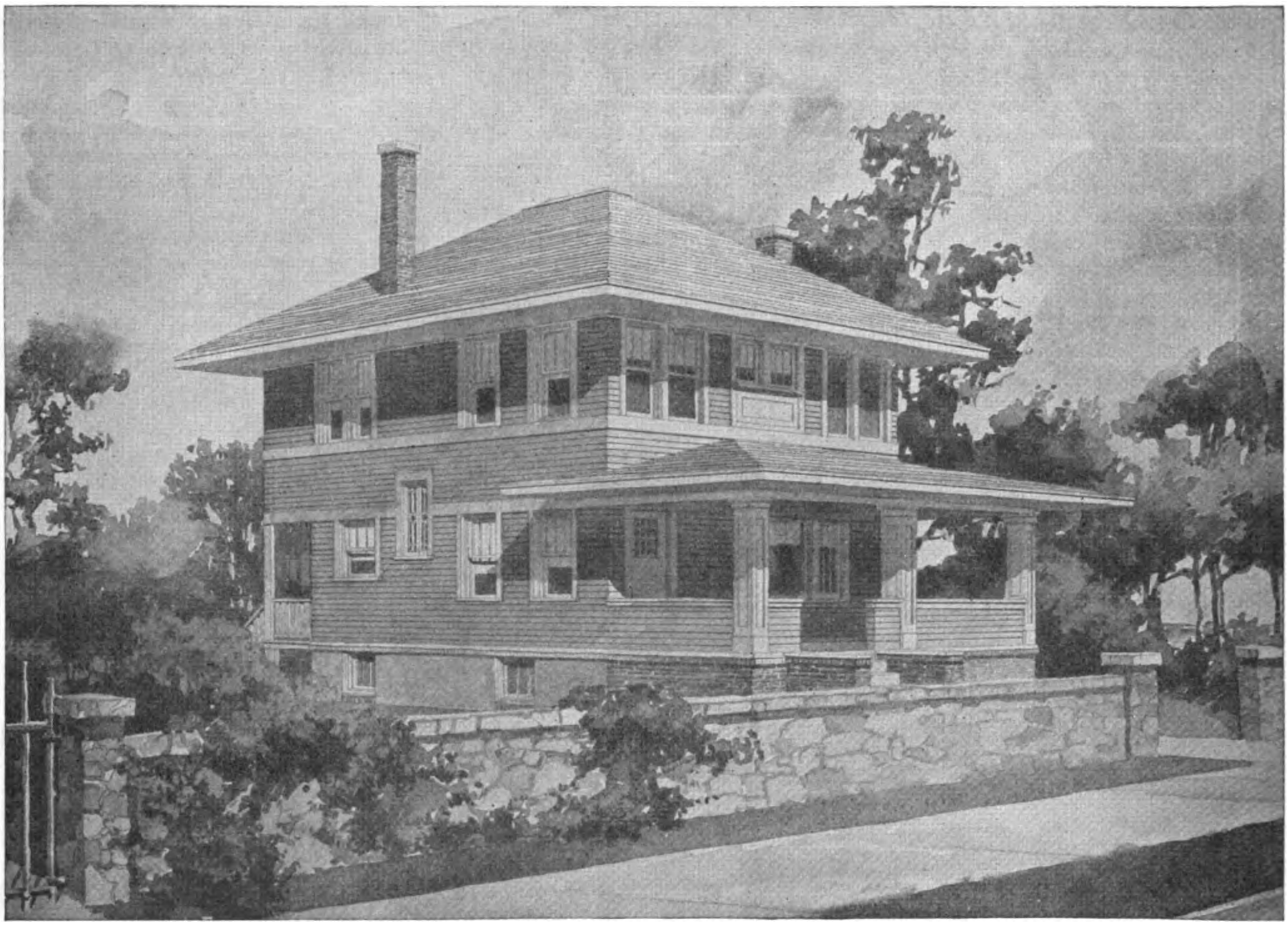
Eight-room, gambrel roof design of great beauty. An economical house to build. Size, 30 ft. 6 in. by 34 ft. 6 in. We can furnish complete set of blue-printed working plans and typewritten specifications for only $9.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6533L.

A glance at the floor plans of this house shows a sensible, convenient arrangement. The stair and reception hall is a generous sized room, opening with broad cased opening into the living room. The living room and dining room connect freely; an open fire place is so situated as to warm both of these rooms quite comfortably in mild weather. The pantry connects the kitchen and the dining room, an arrangement which many housekeepers like, as it helps to keep the kitchen fumes out of the rest of the house.

On the second floor there are three nicely arranged bedrooms and a smaller room, designated as a sewing room. The bathroom is on this floor at the end of the hall, directly above the pantry. This groups the plumbing fixtures well together, and holds down the expense.

The basement of this home has high ceiling. It is clean and dry with concrete floor and cemented side walls. At a slight extra expense it can be lathed and plastered, and this is recommended.

Nothing could be more attractive than this little home, painted yellow or brown and trimmed in white. The shingled roof is stained silver grey.



Square, hip-roof dwelling; six rooms; substantial frame construction. Size, 26 by 31 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6537L.

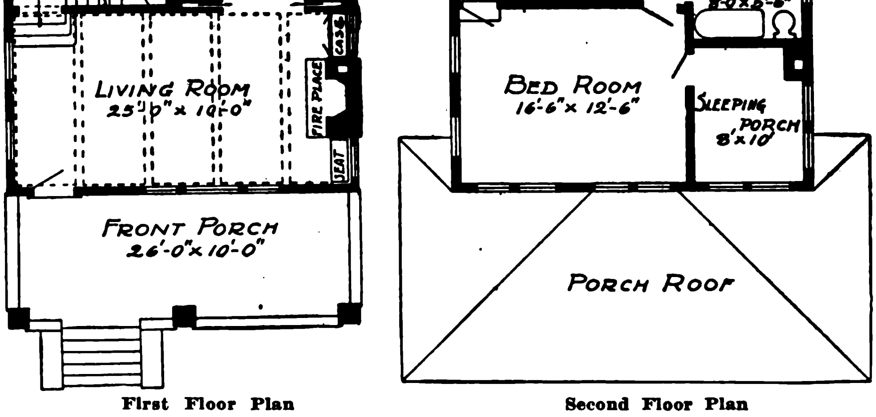
Square Hip-Roofed Design

ON this page are perspective view and floor plans of a six-room dwelling of a most modern type. It is square, compact, dignified. It is painted dark, with light trimmings. The roofs, both on the porch and the main roof are of the hip style and of low pitch. A novel and popular feature of the exterior trim is the continuous band just above the first story windows and also at the second story window sills.

In designing this house it was the desire to keep down the cost as much as possible, and still maintain a feeling of solidity, interior roominess and comfort in the finished building. By adopting the square type and following simple lines this splendid result was obtained.

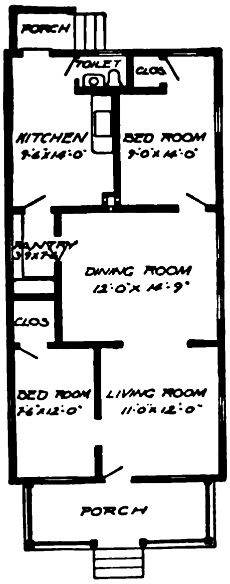
The general dimensions of this house are 26 by 31 feet. It is two full stories in height, and is placed over a cemented basement. Plans show six well arranged rooms. The large living room is a feature of the first floor. It is decorated with a beamed ceiling, brick fire place, and built-in book case and chimney corner seat.

Double sliding doors separate the living room and the dining room. This dining room is a very well lighted apartment, having an attractive built-in buffet. The kitchen is conveniently placed along side of the dining room and has built-in cabinet, cupboard, and ice box arranged for outside icing. On the second floor are three large bedrooms, each arranged with cross ventilation.

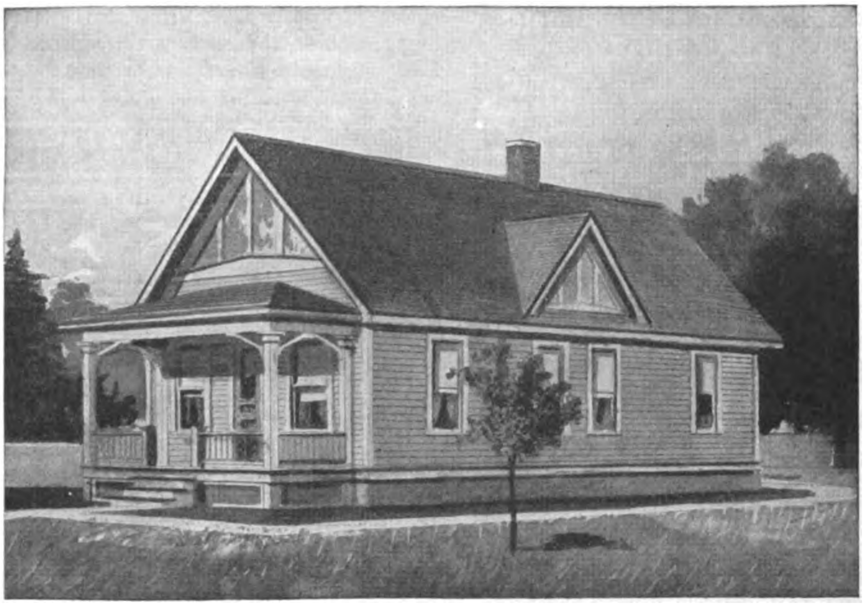


First Floor Plan **Second Floor Plan**

Arrangement of Modern Six-Room House, Size, 26 by 31 Feet



Floor Plan



Plain straight roof cottage. Size, 20 feet wide by 40 feetin length, exclusive of porch. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of foundation plan; roof plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 2001L.

Plain Cottage—Design 2001L

A neat little straight roof cottage, somewhat on the bungalow order, is shown in Design 2001L. It is 20 feet in width by 40 feet in length, exclusive of porches. This size and layout gives us five comfortable rooms. One of the bed rooms is narrow, but the length makes up sufficient room for placing the furniture for convenience, and that is the principle thing necessary in a bed room.

This little house can be built as cheaply as any style of building offering as much room as this that will look right when finished.

Story-and-aHalf House—Design 2003L

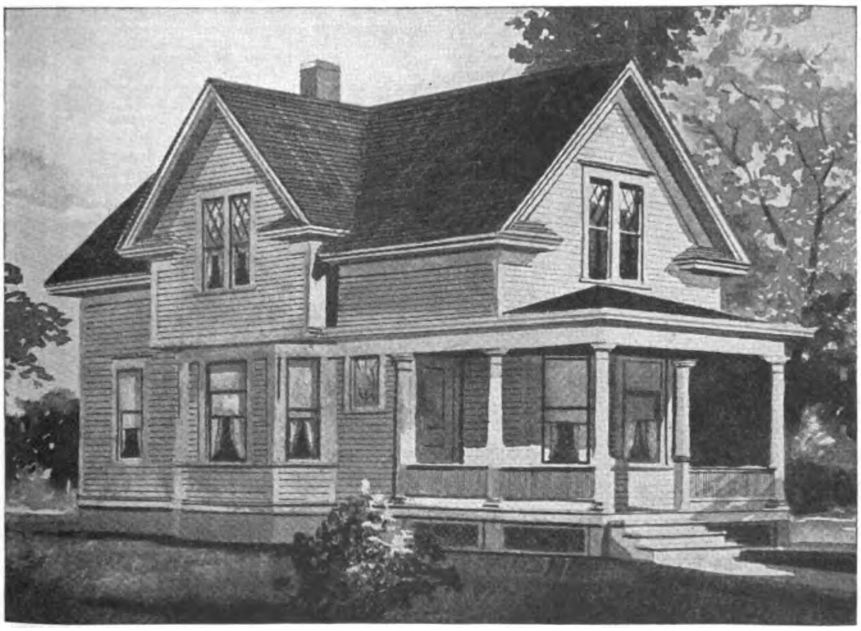
Where comfortable living rooms are wanted with three small bed rooms and a bath room above, this design offers many advantages. In the first place, it is inexpensive to build, also when finished it looks neat and attractive.

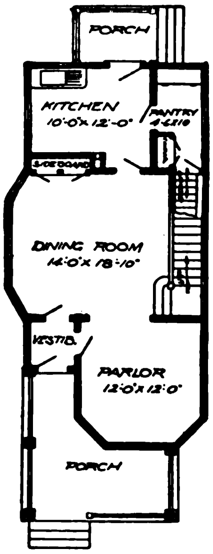
The porch is roomy, which makes a pleasing entrance approach and the bay windows in the parlor and dining room help the architectural effect. It is a convenient house for a small family, easily heated and is generally very satisfactory.

This is the style house that suits a farmer who retires to town to live when he commences to feel the burden of farm management late in life.

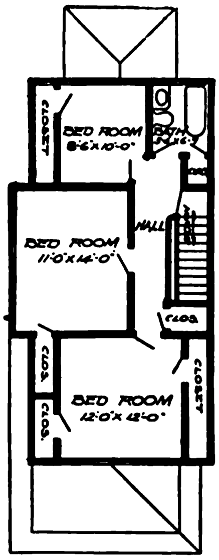
Usually the farm women folks prefer to do their own work. They do not understand the management of town help and they don't want to. They want a neat, little, compact house, that they can take care of themselves. They want a small, warm-air furnace under the dining room, so that the whole house may be heated with one fire. In all probability, they would run a partition across the cellar to make a cold storage room for fruit and vegetables.

This plan has worked well a great many times. It gives the farmer and his family an opportunity to live in town very much as they were accustomed to live on the farm.





First Floor Plan



Second Floor Plan

Story and a half house with bed rooms in the roof. Size, 20 feet in width by 38 feet in length, exclusive of porches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00. Blue-prints consist of basement plan; first and second floor plas; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty-two pages of typewritten matter. When ordering, ask for Design No. 2003L.

Neat Six-Room Story-and-a-half Cottage.

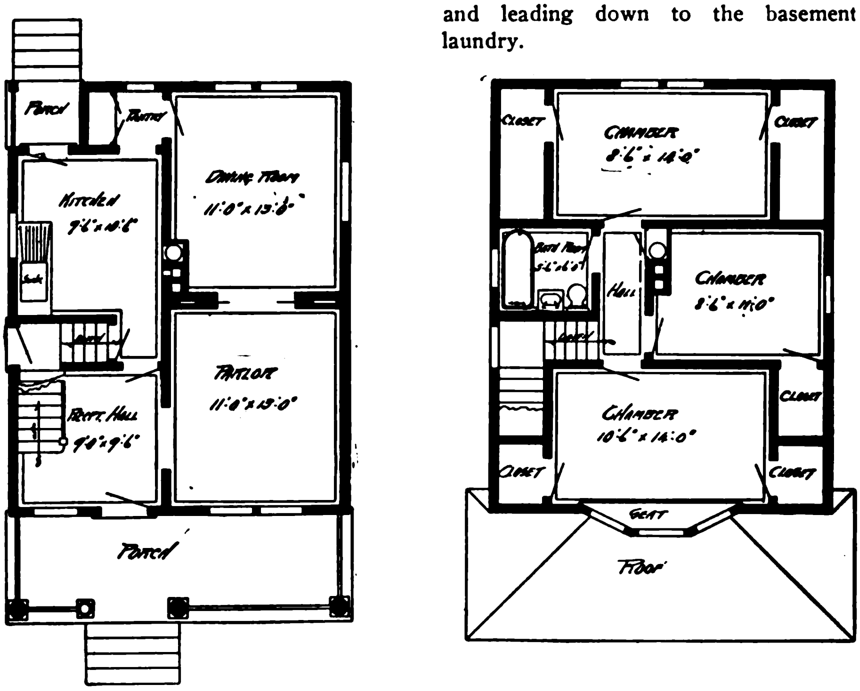
A pleasant little dwelling that will go nicely on a narrow lot is illustrated. It is just about as simple and free from complicated features, that run up the cost, as any house could well be. Its rooms are all pleasant and convenient and there is no waste space.

A house of this kind is inexpensive to build and can be rented or sold at a reasonable price and still give a margin of profit to the owner or builder. As the width is only 22 feet, it will go on a narrow lot very nicely. A narrow lot usually means houses crowded in rather close together; and so in this design the principle lighting is from the front and rear.

The outside appearance of this little dwelling is very attractive; a frame house, with wide clapboard siding, resting on a cement foundation. The shingle roof has a slight curve just at the eaves. Wide fascia boards, sawed out with a flare at the bottom give the front gable end an ornamental appearance.

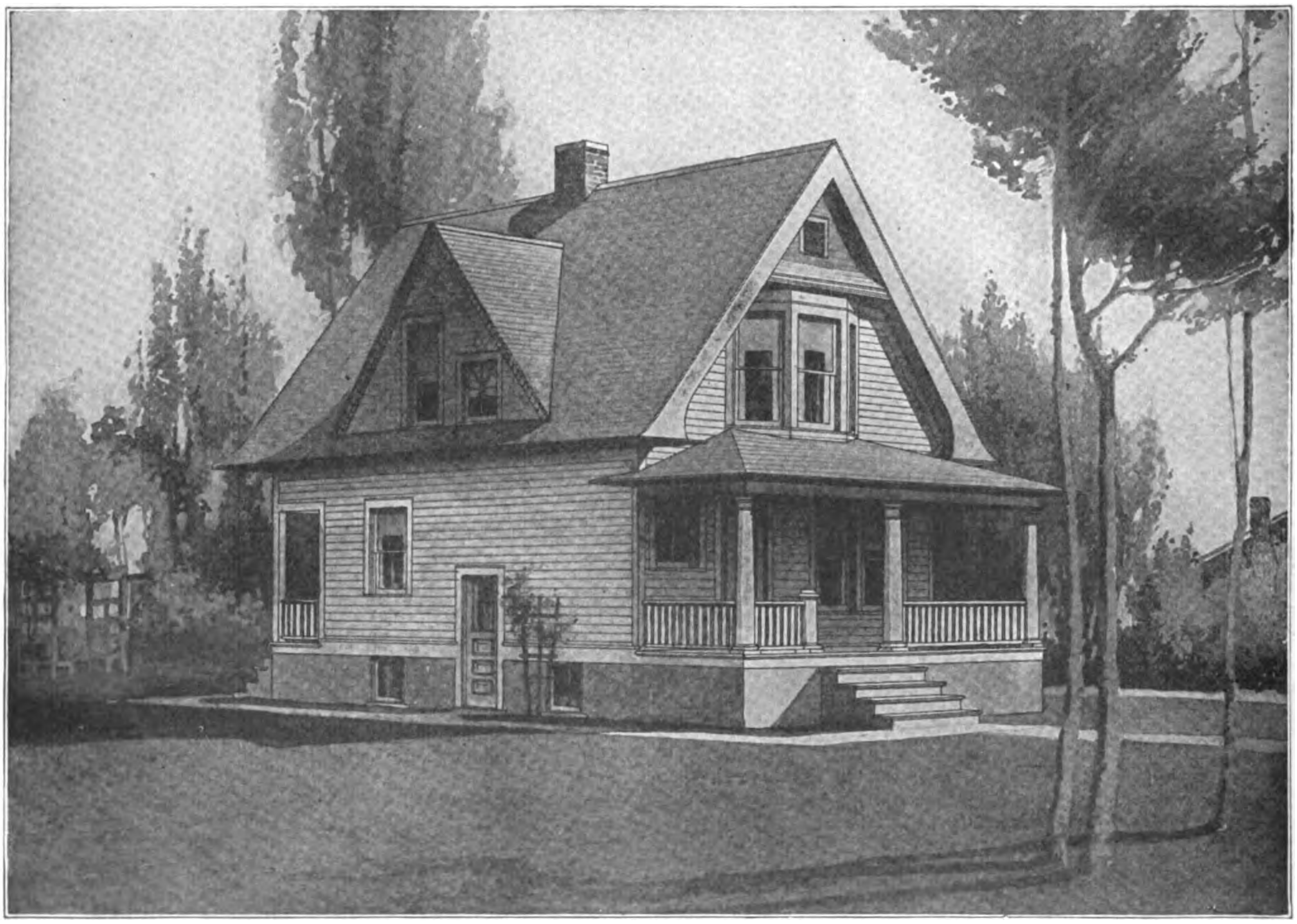
The front porch is generous in size and has neat porch rail and three turned columns. Entrance is into a square reception and stair hall; from this one can pass into the parlor, through a cased opening to the right, or directly back into the kitchen. The dining room is just back of the parlor.

A special feature in this design is the laundry chute opening from a little closet across the hall from the bathroom on the second floor, also with an opening out of the kitchen on the first floor and leading down to the basement laundry.

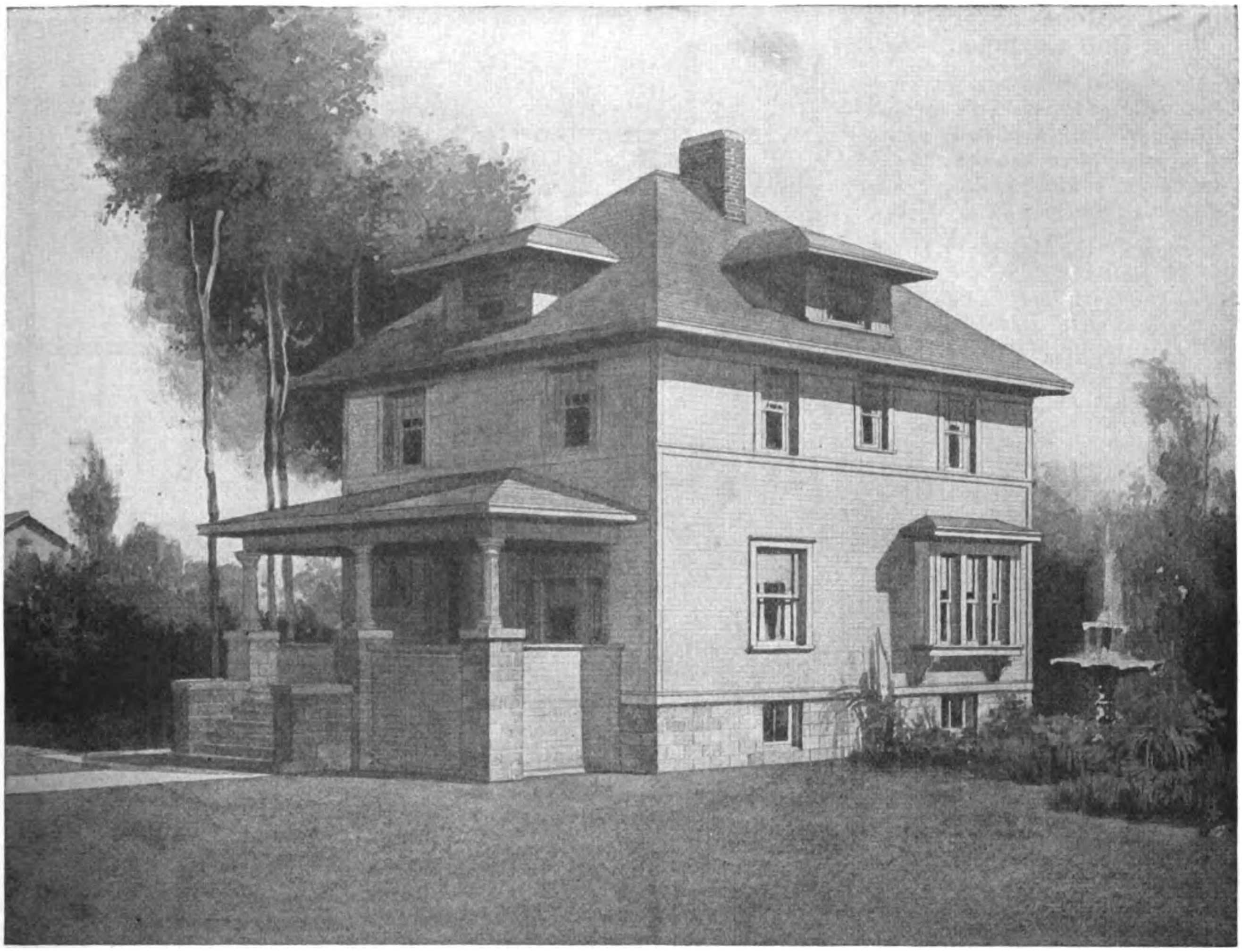


First Floor Plan. Second Floor Plan.

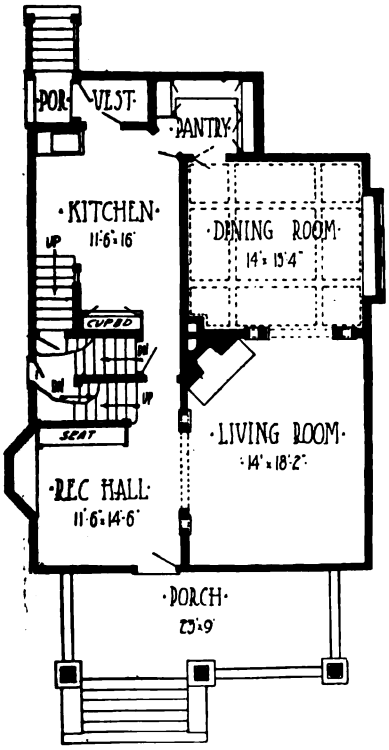
Arrangement of Six-Room House, Size 22 by 28 Feet.



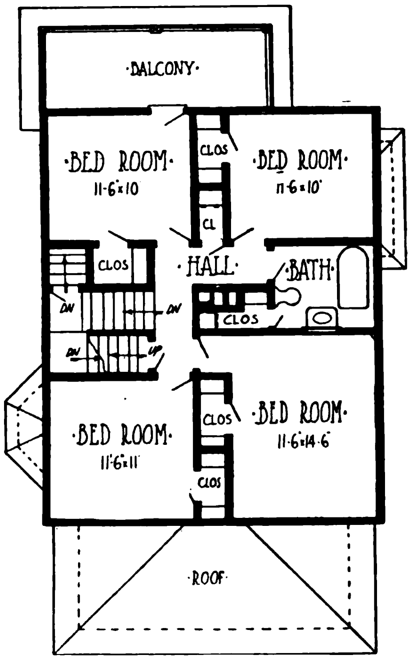
Six-room, story-and-a-half, frame dwelling. Size, 22 by 28 feet. A cozy, substantial home. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6560L.



Tall, deep, two-story house. Size, 26 feet by 39 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8 per set. Blue-prints consist of basement plan, roof plan, first and second floor plans, front, rear, two side elevations, wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6551L.



First Floor Plan



Second Floor Plan

Elegant Two-Story House

The size and shape of a lot often determine the style of most buildings. This plan is 27 feet wide by 39 feet in depth, which permits rather a narrow lot.

The house is well set up on a rather high cellar wall, which helps to give it a lofty appearance. This plan lends itself well to a good arrangement of rooms. On one side, downstairs, is a large, comfortable living room, and a good-sized dining-room, which is balanced up on the other side by the kitchen, reception hall and stairway.

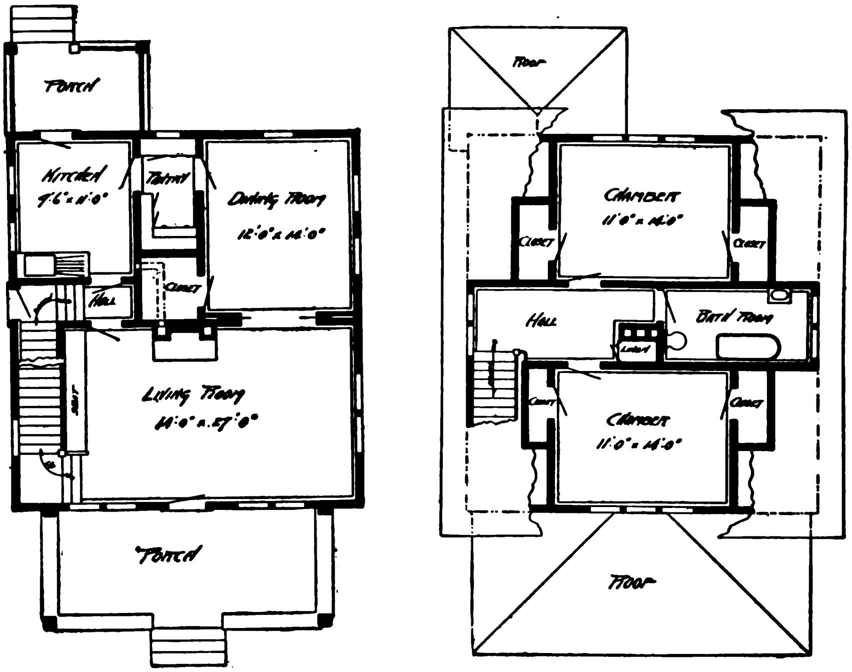
Upstairs there are four very pleasant bedrooms. The plan is just right for a bathroom between two of the bedrooms on one side and the stairway similarly situated on the other side, while the clothes closets are principally distributed down through the center. It will be noticed that there is very little room taken up by the hallway, the space is in the rooms and a short passageway, which is as light, almost, as the rooms themselves.

Trim, Five-Room, Story-and-a-Half Cottage

Neatly designed, trim, snug, and homelike is our ideal for the little dwelling that is to prove most popular these days. Start to put up a cottage like this one illustrated and it will be sold or rented before you get the roof on.

The majority of people can't afford to live in a great big place; it costs too much for fuel and lights and furniture. Also it is too much work to take care of. The housewife prefers just a few rooms she can look after herself instead of having to have help.

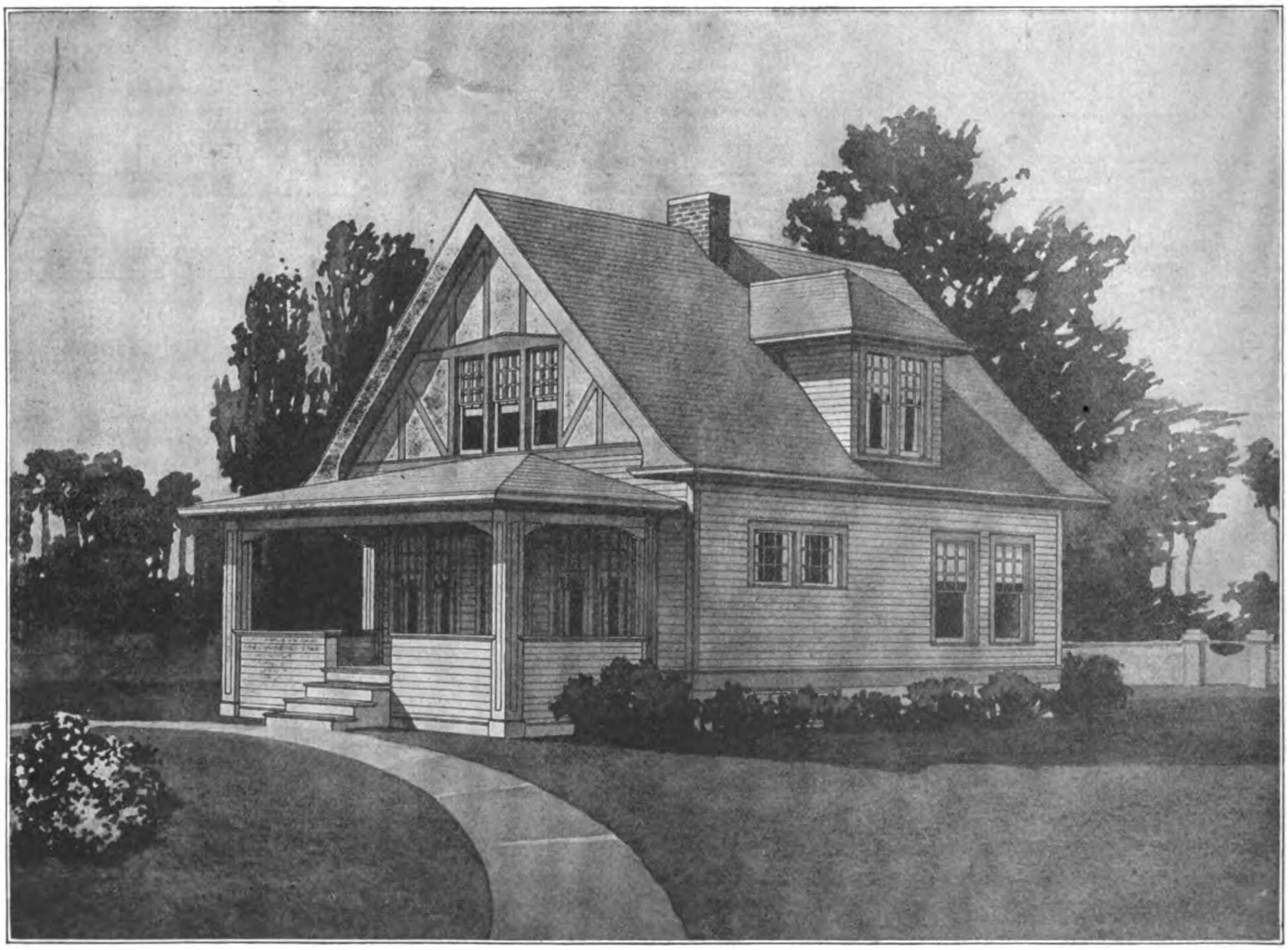
This is a frame building and has ornamental stucco panels in the gables. The first floor has extra large living room with connecting dining room. Kitchen is handy to the dining room as well as to the front of the house. Side door is a grade entrance onto the cellar stairway landing. On the second floor are two large, well-lighted bedrooms, four clothes closets and large bathroom.



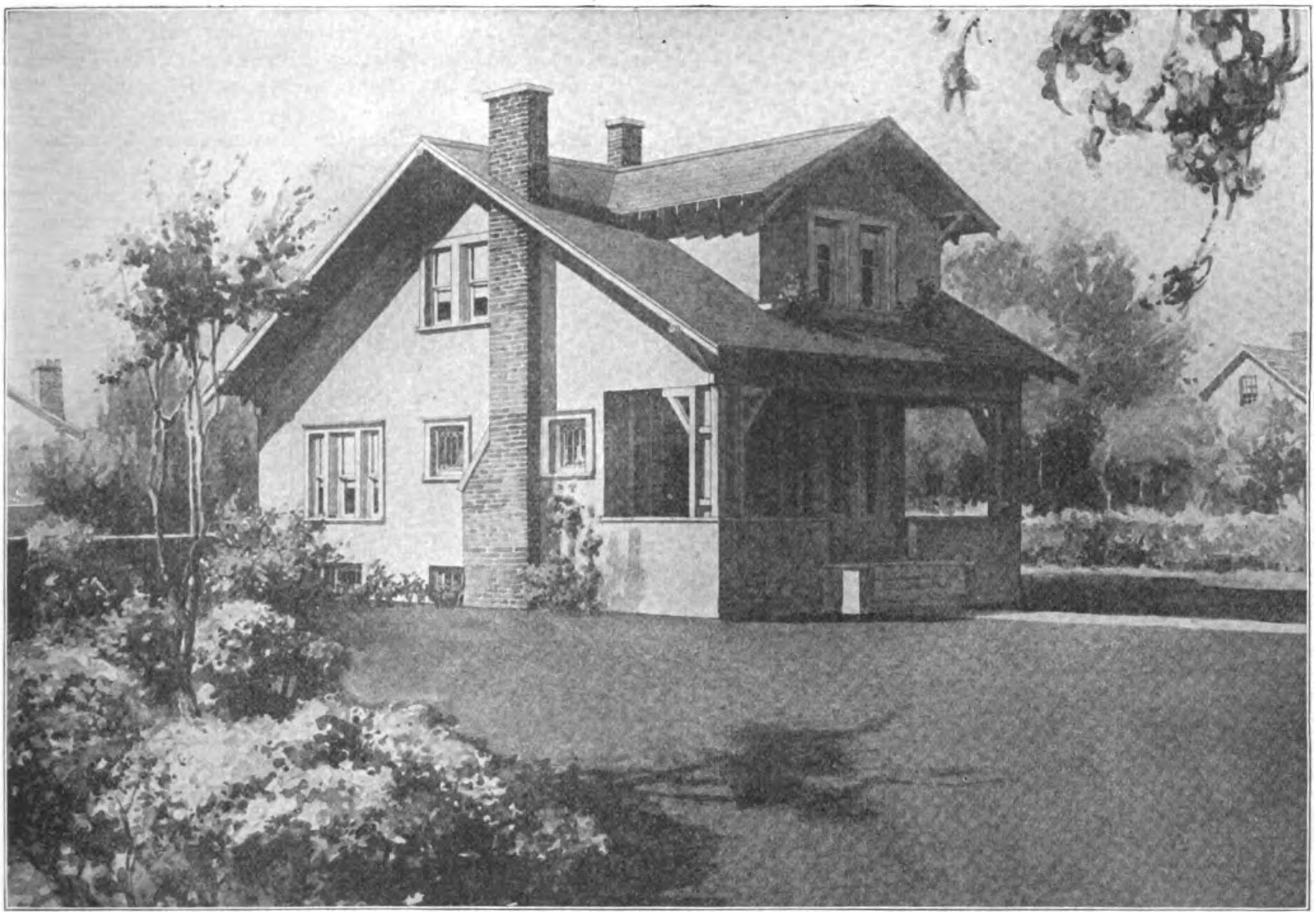
First Floor Plan

Second Floor Plan

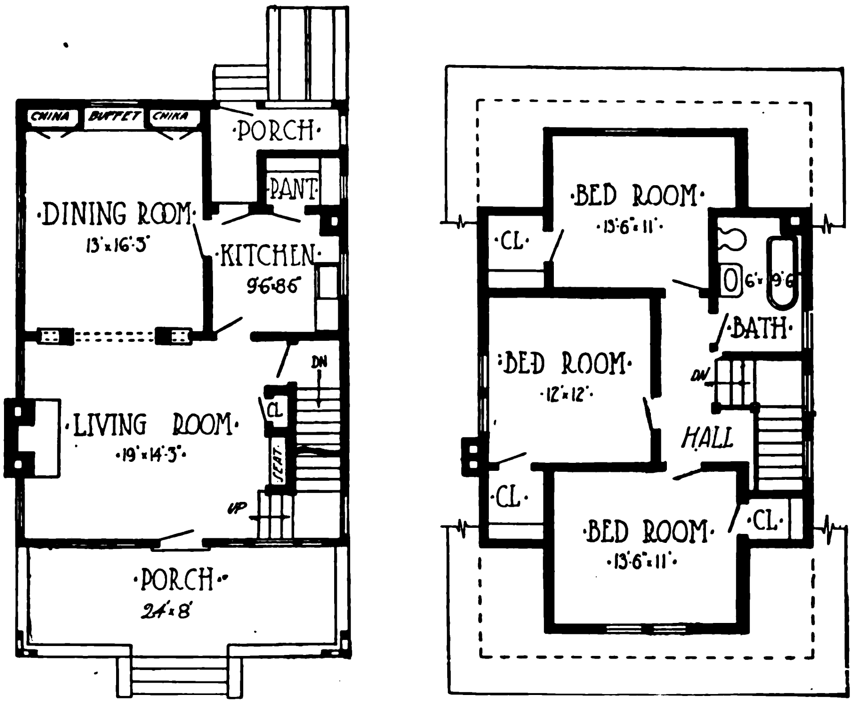
Arrangement of Five-Room Cottage. Size, 27 by 28 Feet



Five-room story-and-a-half cottage. Size, 27 by 28 feet. A very neat little home. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans, front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6540L.



A bungalow style cement plaster house, containing six rooms. A stylish little home of moderate cost. Size, 24 by 32 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6548L.



First Floor Plan **Second Floor Plan**

Arrangement of Six-Room Cement Plastered Bungalow. Size, 24 by 32 Feet

Bungalow Style Stucco Cottage

A story-and-a-half cottage of true bungalow appearance is offered. It is one of the most popular little houses of the year. Three rooms are provided on the first floor and on the second floor three bedrooms, bathroom, and three closets are worked in under the roof and in the large roof gables.

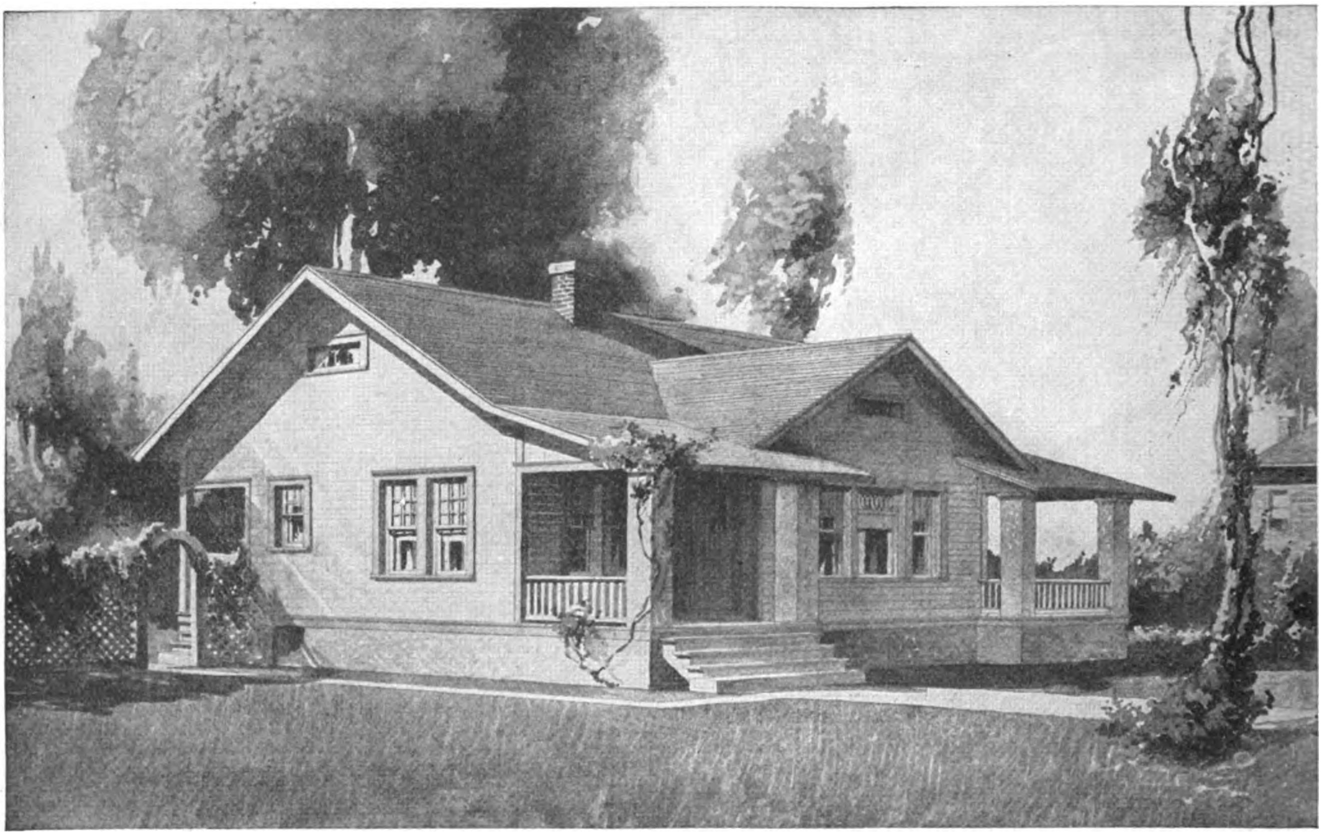
The front porch is large enough to be thoroughly useful. In the summer time it could be easily screened. Entrance is direct into the large living room. The dining room is back of this through a tasteful colonnade opening. The kitchen is just the right size to save steps.

In construction, this bungalow is cement plaster on metal lath. The brick chimney makes an interesting feature. Laid up of dark brown face bricks, it makes a pleasing contrast against the cement plastered walls. The window sash are painted apple green to give a little touch of color to the place.

The bungalow style of this little dwelling is accentuated by the wide projecting open cornices wtih rafter ends showing, also by the unique porch columns—strongly braced posts.

Comfortable Six-Room Bungalow

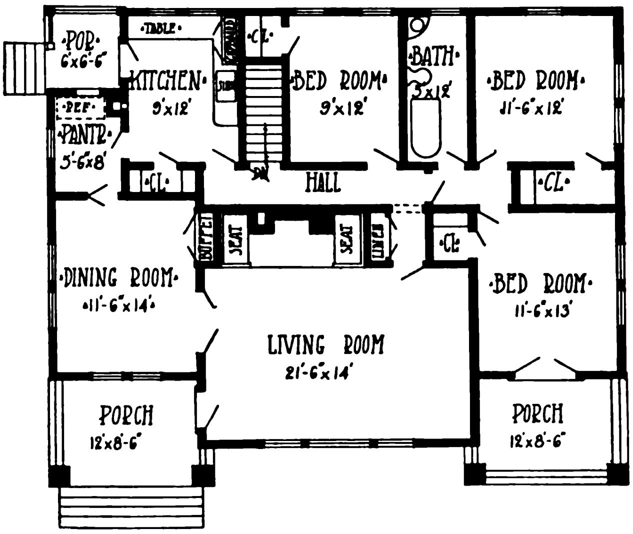
There is a charm about a bungalow that appeals to everyone. This design meets the requirements of particular people. There are two features in this plan that are difficult to find in bungalow plans. One is that there are six good-sized rooms and the bedroms are entirely separate from the living rooms.



Special six-room bungalow. Size, 46 feet 6 inches by 45 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10. Blue-prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6567L.

Architects have worked nights and Sundays to incorporate these two features into a medium-priced bungalow, and are now congratulating themselves that it has actually been accomplished. It is easy to build a five-room bungalow, but the sixth room has always been a "Chinese puzzle," and the Chinese have always left it to the Yankee.

There is one especial feature about this bungalow that will appeal to the heart of every woman, and that is the splendid large living room, with a big, cheerful fireplace, and plenty of light in the front. Light is obtained by putting in a triple mullion window, and the light is not obstructed.



Main Floor Plan of Bungalow.
Size, 46 Feet 6 Inches by 35 Feet 6 Inches

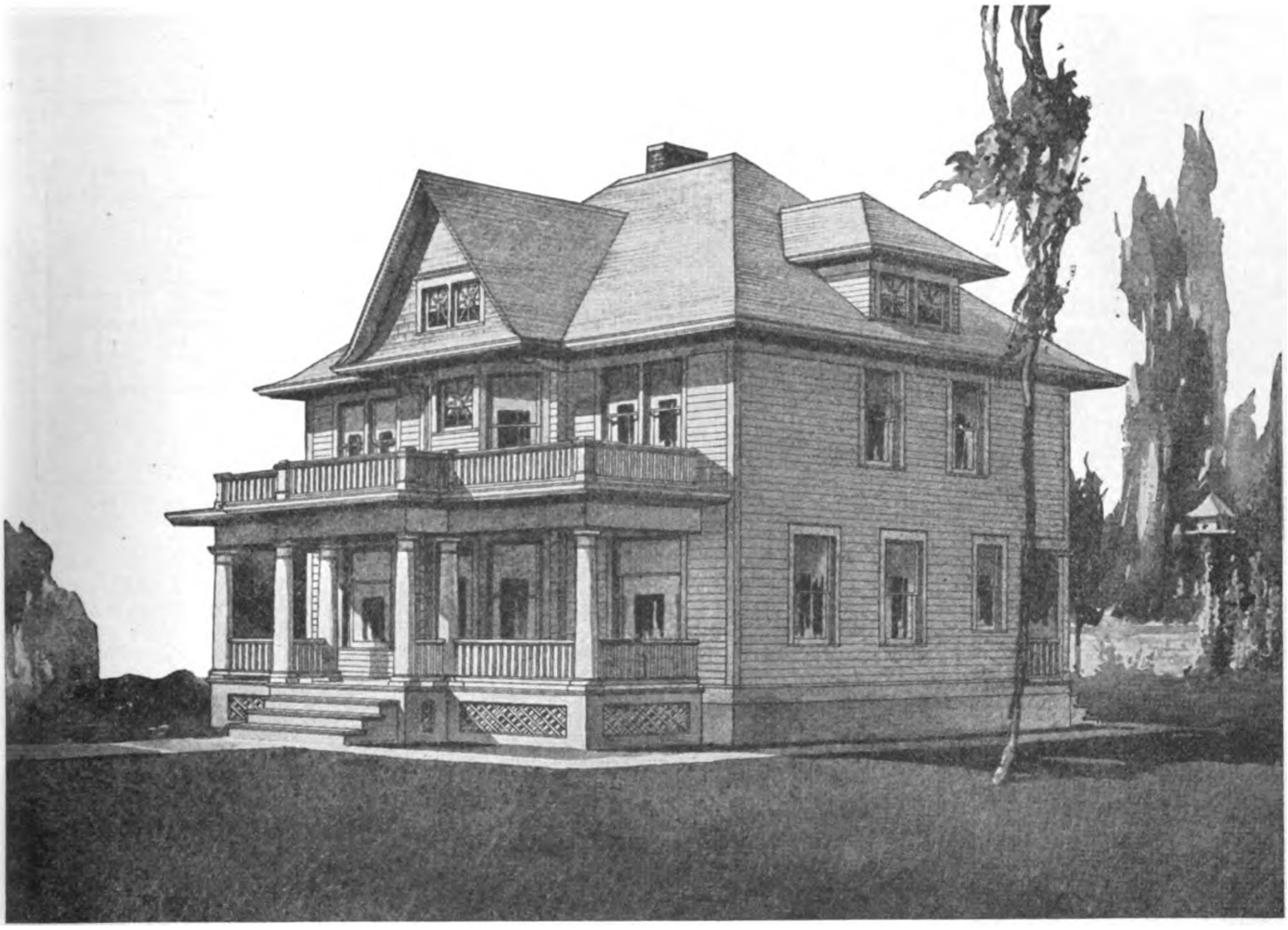
The plan of building a porch and a loggia makes this arrangement possible and adds greatly to the appearance of the building.

The size on the ground is 46 feet 6 inches by 35 feet 6 inches—not large when the amount of room and conveniences are taken into consideration. Every room is light and of easy access, and each room is large enough for the purpose it is intended for.

A feature about this plan will appeal to every woman is the number of clothes closets and the manner in which they are placed for convenience. In a bungalow a woman must have places to store things, and a great difficulty has always been to find such conveniences without going upstairs for them. A study of this plan will interest everyone who has or can get a building lot suitable for a building of this kind.

The front porch also adds to the house a pleasing approach, besides making a very comfortable outdoor sitting room summer afternoons. The comfort of a porch depends somewhat upon the direction in which it faces, but usually in towns and cities there are convenient shade trees, all of which must be taken into account in choosing a house plan.

A bungalow 46 feet wide must not be crowded in close between other buildings; it spoils the effect of airy roominess that a bungalow is supposed to typify. There is as much good judgment in selecting a lot for size, shape and outlook as there is in selecting the plan of house to put on it.



A good-sized two-story house and big attic house. Size on ground, 38 feet by 28 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan, roof plan, first and second floor plans, front, rear, two side elevations, wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for design No. 6576L.

Large Two-Story House

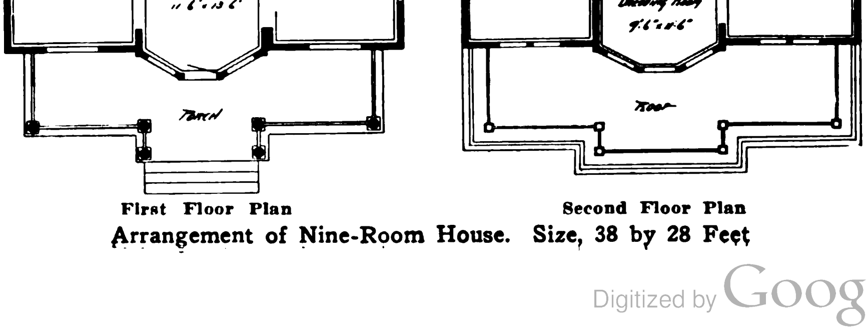
For a family of four or more persons, a large two-story house like this with a good attic is a great comfort. In this plan, there are five rooms downstairs, besides a good-sized reception hall, and there are four good-sized bedrooms upstairs, besides the bathroom, plenty of clothes closets and a dressing-room that comes in very handy for a child's cot when the little folks are young enough to need the mother's care at night.

There is a very attractive stairway in this plan that looks well from the reception hall, and it is convenient of access from the front part of the house or the kitchen; a two-way combination; an invention that has been utilized to advantage to save space and steps. Steps enough are required in doing the housework in a house as big as this, without wasting time and labor hunting for a way to get up or down stairs.

The way to the cellar is under the center part of this stairway, and the cellar landing is made where it is convenient to the heating apparatus. Continuing up is the stairway to the attic, directly over the main stair, which is another economy. Architects worked a good many years to build this stair, but success has been reached, and we now have the acme of economy and convenience without sacrificing appearance.

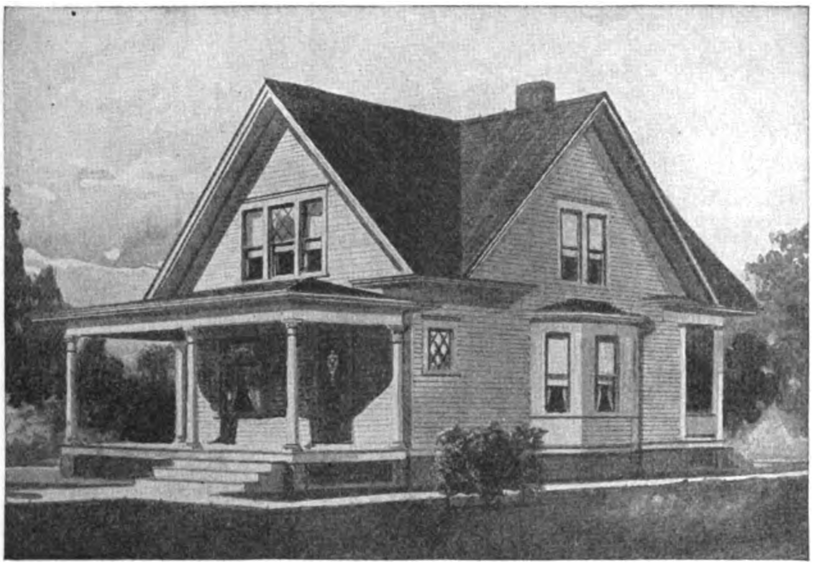
A large two-story house like this requires an imposing veranda and balcony, which have been well worked out in this design. It makes a finish to the front of the house and adds a great deal to the value of the property.

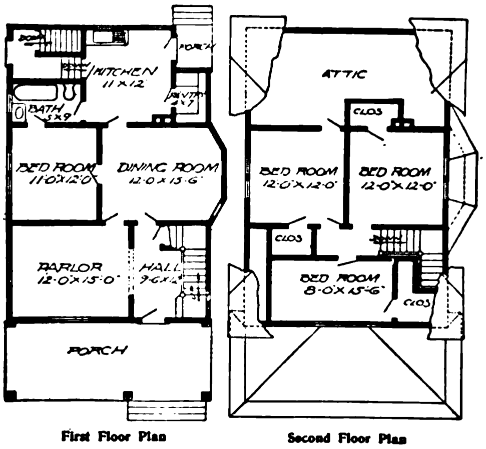
The library in this plan is the office for the man of the house and a study for children of school age and those of more mature years. This makes a cosy family room, where the "kids" and the parents are likely to spend winter evenings enjoying a pleasant open grate fire.



First Floor Plan **Second Floor Plan**

Arrangement of Nine-Room House. Size, 38 by 28 Feet





First Floor Plan Second Floor Plan

A house of four gables, 28 feet wide by 38 feet in length, is illustrated in this design. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of foundation plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 2008L.

House of Four Gables—Design 2008L

The appearance of a house depends greatly upon the shape of the roof. Design 2008L has much more room than its outside appearance would indicate. It looks like a small house, but it contains seven rooms and they are all plenty large, because the space in the gables have been used to such good advantage.

The arrangement of the rooms down stairs is very pleasing. The up stairs is divided between three bed rooms and the attic storage room.

Six-Room, Story-and-a-Half House—Design 9021L

Six-room houses are very popular in almost all American cities. Six rooms will accommodate most families, but sometimes there is little waste or unused room to be cared for. This design, No. 9021L, offers a splendid arrangement of rooms.

The large dining room, 12 by 17 feet, with a fire-place is the main attraction. The open stairway going up from this room is one of the interesting features of the house.

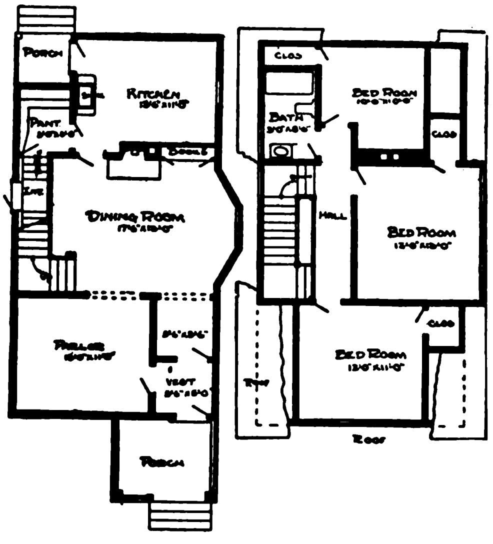
In this case it was necessary to have a window on that side of the dining room, so the plan of building an open stair was adopted. It permitted a window over the first landing, which, together with the bay window on the opposite side of the room, admits plenty of light and ventilation.

The double vestibule entrance is different from most houses. It is intended as a substitute for the usual hall way. There is a place for a hat and coat rack in the alcove as you enter the dining room, and a hall tree may be placed in the vestibule.

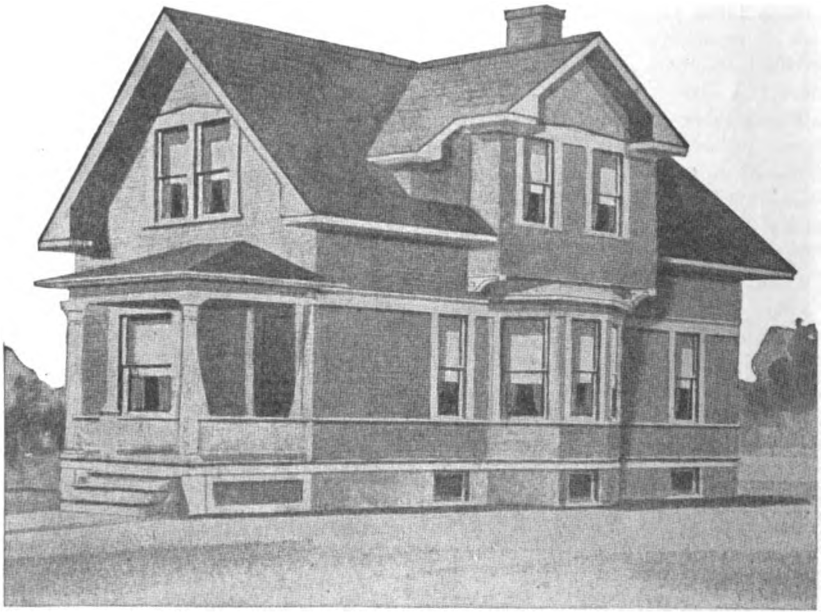
It is a well balanced house, with its three rooms down stairs and the three bed rooms with a good bath room upstairs.

Kitchens as large as this one are not common in small houses. But where the dining room is used for a general living room, the large kitchen may be used for dining room except on state occasions when the rich uncle comes to be entertained.

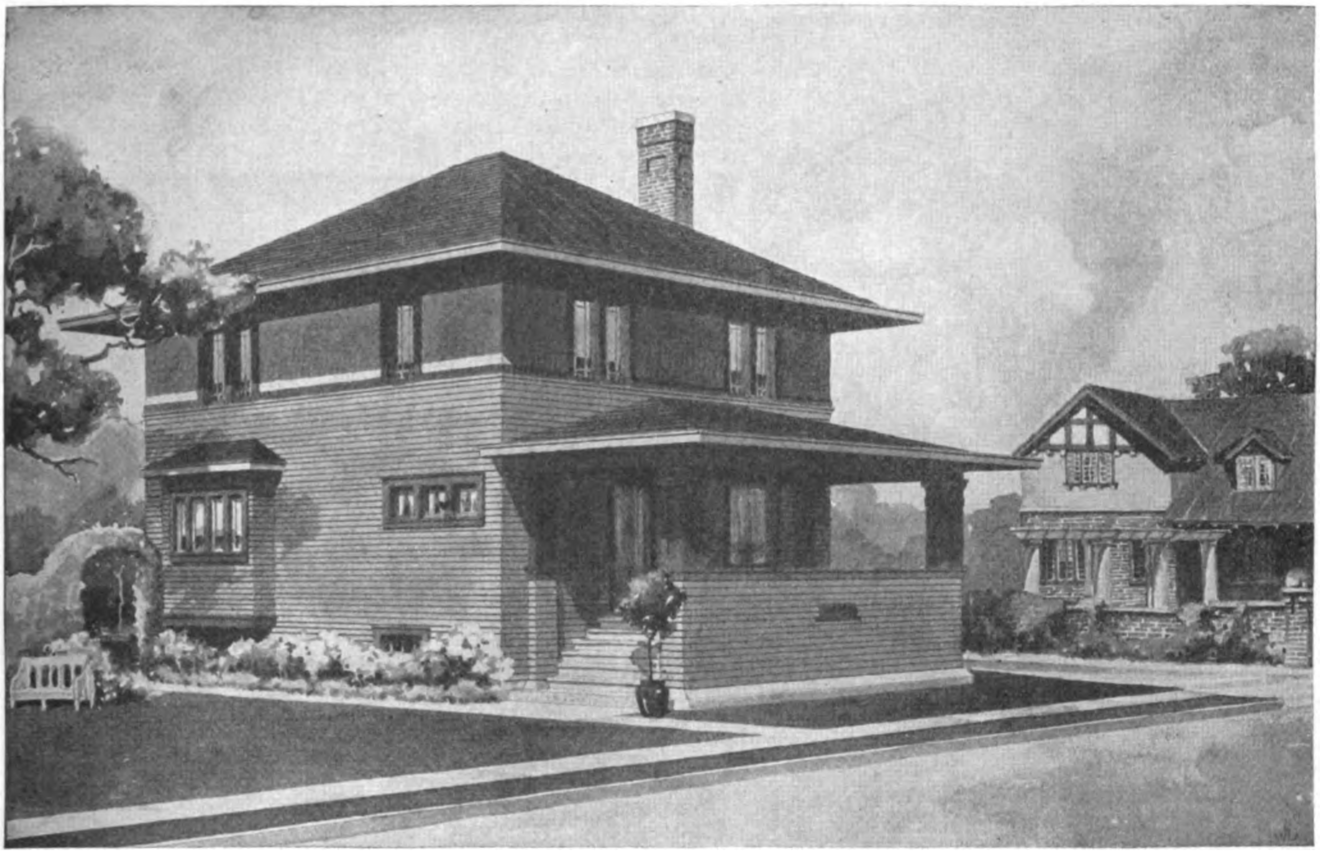
The little back porch on one of these houses was screened with wire fly netting and a Dutchman's pipe vine was trained to climb all over a woven fence wire trellis hung from the roof cornice. This screen reached back along the side of the house until it covered the pantry window, making the pantry dark and cool in summer.



First Floor Plan. Second Floor Plan.



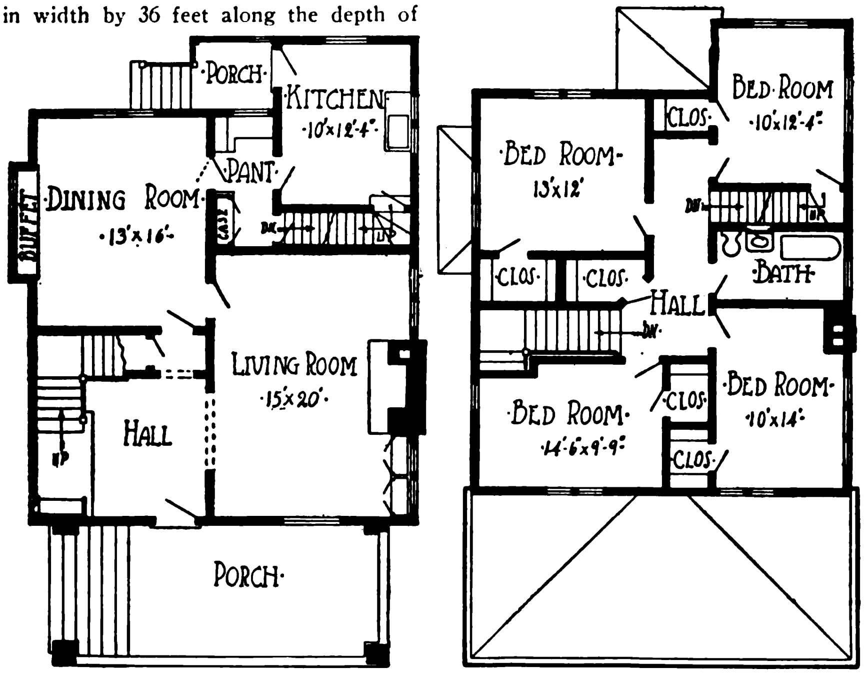
Six-room, story-and-a-half house. Size of house, 28 feet wide by 38 feet long exclusive of porch. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of foundation plan; first and second floor plans; front rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 9021L.



Eight-room, popular style design, combining clapboards and cement siding. Size, 28 by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6535L.

Square Residence with Cement Plastered Second Story

ON this page are perspective view and floor plans of an eight-room house of very neat, graceful lines—an economical structure. It is 28 feet in width by 36 feet along the depth of the lot, not including front porch. The exterior presents the popular combination of bevelled siding from grade up to second story window sills, with cement plaster work above up to the eaves.



First Floor Plan **Second Floor Plan**

Arrangement of Eight-room House. Size, 28 by 36 Feet

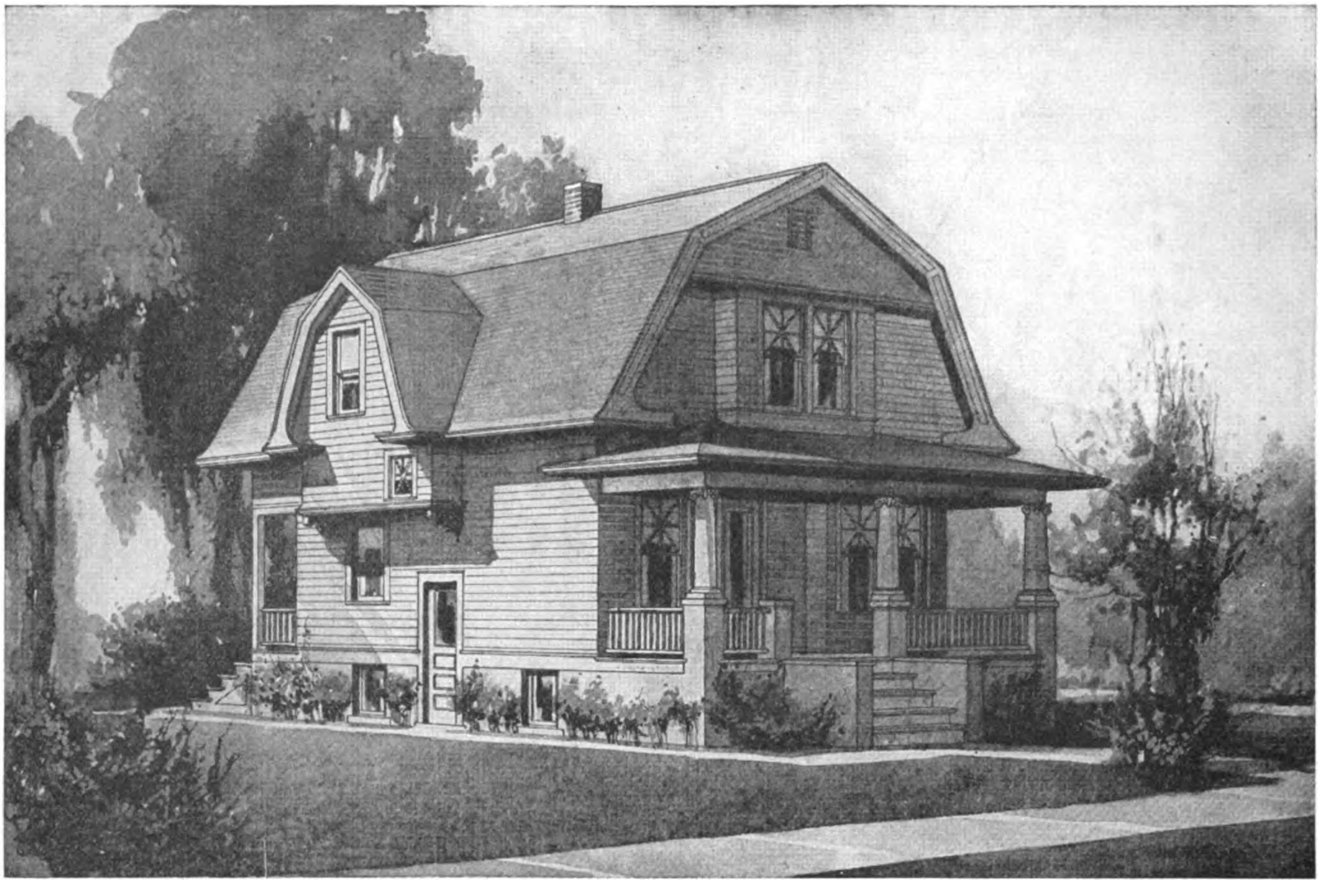
The interior of this house is cozy and comfortable. A broad porch extends clear across the front. Entrance from the porch is direct into the reception hall. To the right, through a broad doorway is the large living room with is open fire place and built-in book case.

The dining room is directly back of the hall; it has a square bay window with four outward opening casement windows. The kitchen is at the rear corner of the plan, and is separated from the dining room by a large pantry. There is a back stairway from the kitchen in addition to the main stairway in the front hall.

Upstairs are four very nice-bedrooms with ample clothes closets.

Every bed room has cross ventilation, with windows on two sides. The extra generous supply of windows throughout this house, both upstairs and down, stamps it as right up-to-date.

This house design is one of the most attractive and popular. It is absolutely free of ornamentation and elements that complicate the construction of a house, and so is about as economical as any structure of this size could well be.



Neat gambrel roof frame dwelling of seven rooms. A very stylish design. Size, 24 feet by 30 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6568L.

Attractive Gambrel Roof Residence of Seven Rooms

There is always something substantial and stylish looking about a gambrel roof residence. If the roof slopes are correctly proportioned, there is nothing finer.

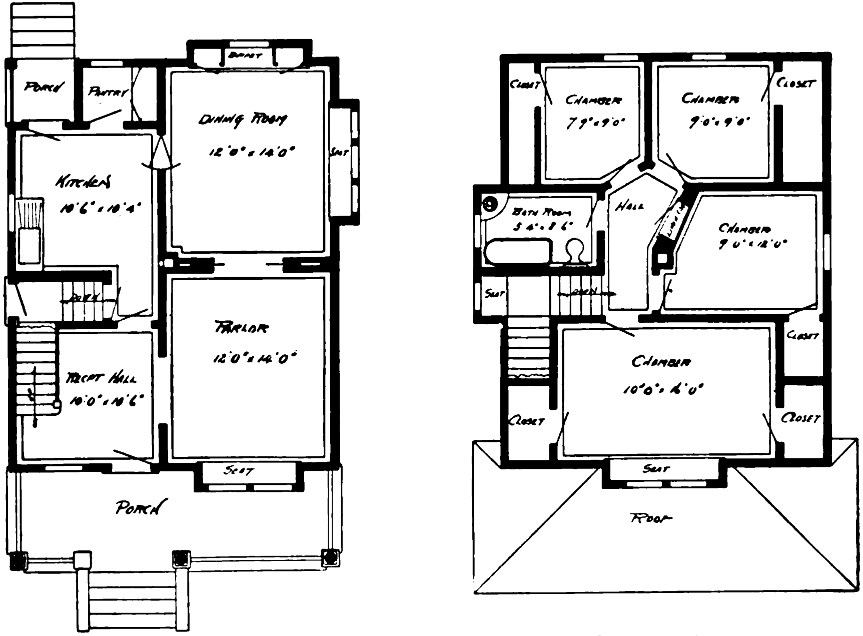
In this design illustrated, the attractive effect is strengthened by the large gambrel dormer on one side. This serves a double purpose. It improves the outside appearance and also accommodates a second-story projection of about 3 feet, which allows the bath room to be placed to good advantage on this side of the second floor plan.

This is a thoroughly good design and interior arrangement for a medium-sized house. The rooms are all large enough for comfort and their arrangement is more than ordinarily good. All the rooms are well-lighted. On the first floor are reception hall, parlor and dining room, opening together with double sliding doors into kitchen and pantry. On the second floor are four bedrooms, five clothes closets and a built-in linen closet. The bath room also is on this floor. One of these bedrooms is extra large.

A very beautiful and comfortable porch extends clear across the front of the house. The porch columns are turned stave columns of classical design.

There is a grade entrance door at the side of the house, with stairs going both down to the basement and up to the kitchen hallway. No other cellar stairs than this are required.

The basement is cement floored and contains laundry, heating plant with coal bin, vegetable cellar, etc. The foundation wall extends well above grade, which permits good sized cellar windows for light and ventilation.



First Floor Plan **Second Floor Plan**

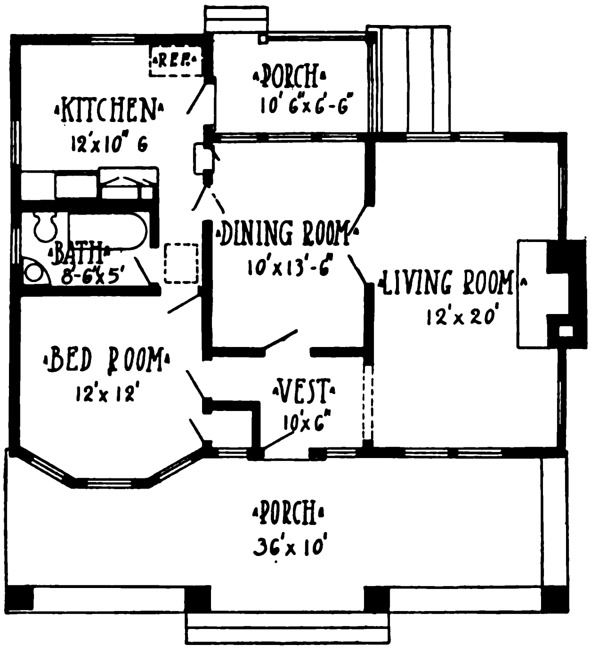
Arrangement of Seven-Room House. Size, 24 by 30 Feet.

Beautiful Four-Room Bungalow

The greatest possible comfort to the square foot of floor space is what architects are working for. This little bungalow was designed for a newly married young woman who wanted a large living room in the end of the house. The arrangement shown in design No. 6626L is the result.

Here we have a bungalow 36 feet by 27 feet 6 inches in size, having a living room 12 by 20 feet. This living room is at the end of the house with two windows looking out on the front veranda. Two other smaller windows are placed in the far side where the light is unobstructed. At the sides of the fireplace chimney are two casement windows placed high enough to accommodate book shelves underneath. Altogether this large living room is as attractive as similar rooms in houses costing a great deal more money.

While there are plenty of windows for light, there is also plenty of wall space for furniture. A study of living rooms shows the necessity of planning the wall space to fit modern furnishings. The present plan of dividing house space so as to give one large, comfortable room has led to the designing of furniture to match the size of the room. Little, old-fashioned parlor furniture looks out of place in a fine large modern living room. Large, easy chairs of many different kinds and fine, upholstered davenports, with player pianos and the large, new music boxes all require considerable room.



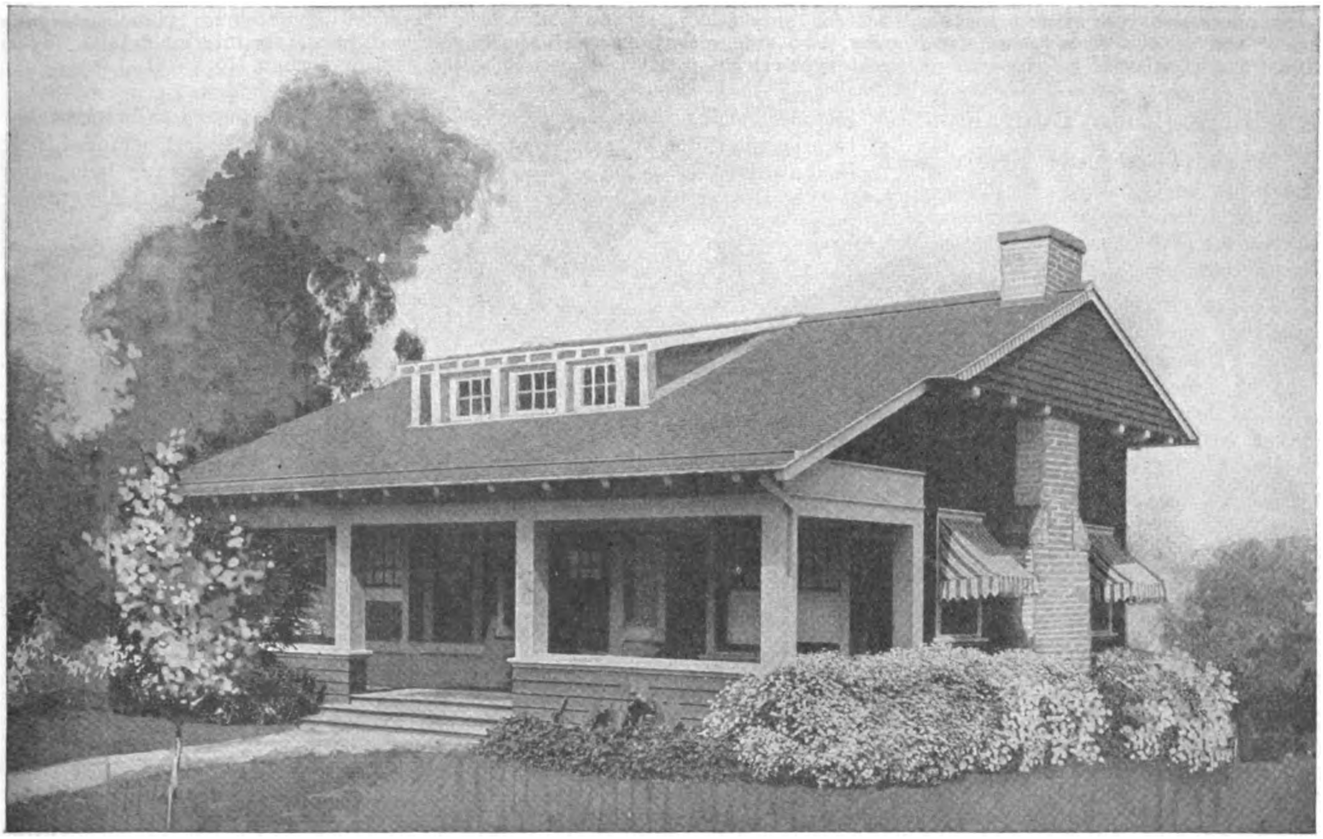
Floor Plan of Bungalow,
Size 36 Feet by 27 Feet 6 Inches.

It is difficult to say whether the new furniture was built to fit the rooms or whether these large rooms were designed especially to hold such splendid furniture. Certain it is, however, that the two hobnob together very nicely when they are properly selected to fit each other. All these new finishings are worked out to please the woman because they are the ones who take care of and use the modern creations, while the men help to enjoy them.

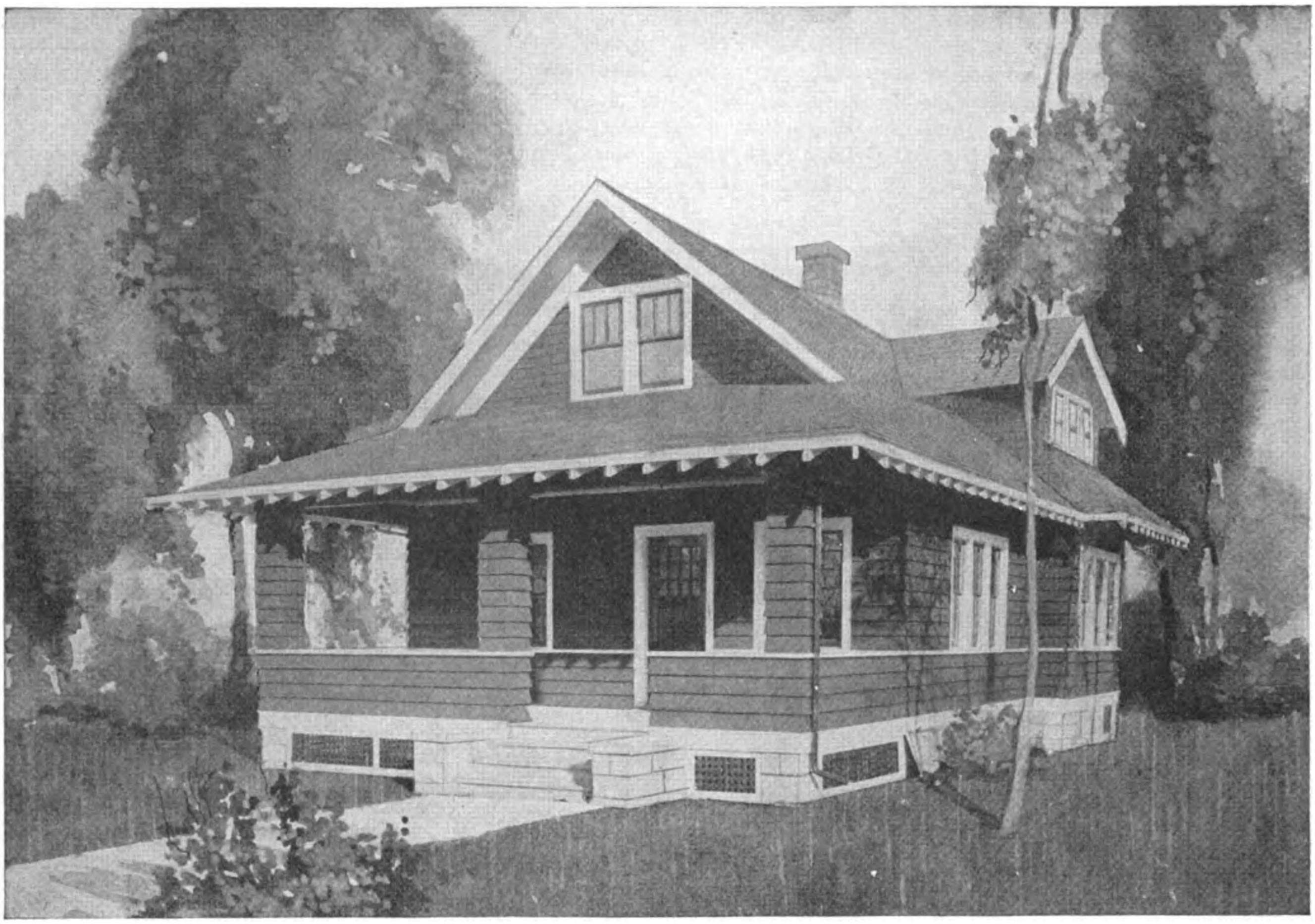
The other rooms in this little bungalow are just as important as the big living room, and they are just as carefully arranged and planned for comfort, convenience, and even luxury. A convenient hallway opens into three rooms. Hallways are liked by a great many people, even in bungalows.

One end of this little bungalow is taken up with bedroom, bathroom and kitchen, with a passage or small hallway to connect the three rooms.

The kitchen is about as cheerful as any room in the house.



Four-room bungalow, 36 feet by 27 feet 6 inches in size. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue prints consist of basement plan; roof plan; floor plan; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6626L.



Bungalow design containing 8 rooms. Size, 31 by 37 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6625L.

Eight-Room Bungalow

Bungalows originally were covered with low roofs having very little pitch, but the demand for more room and still retain the pretty bungalow effect has led to the style of roof shown in this design.

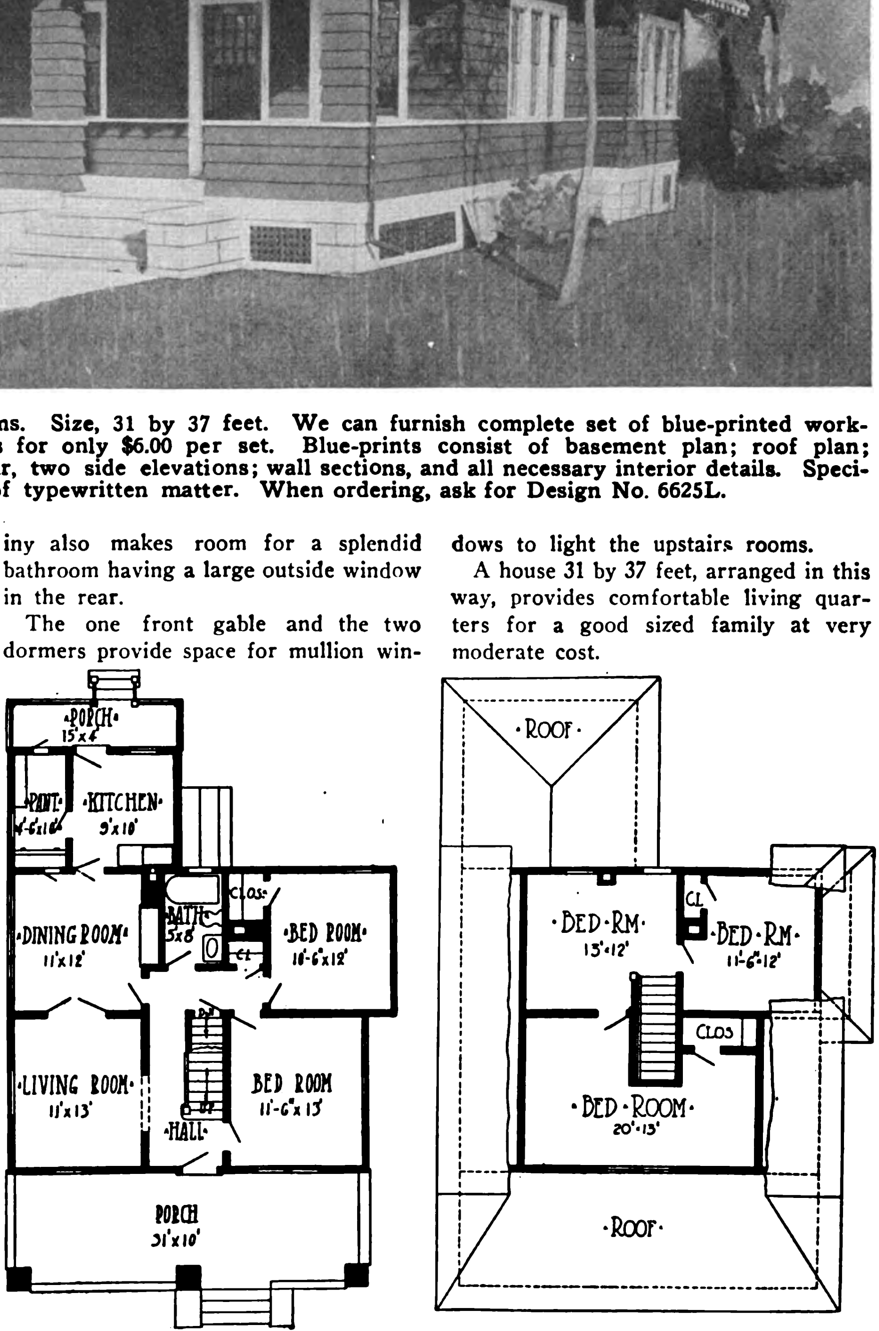
To get sufficient head room upstairs the stair lands almost directly under the peak. This arrangement also brings the landing near the center, where the entrance doors to the upper rooms are most convenient. The building of the stair in this manner also gives easy access to the cellar from the center of the house. The two bedrooms to the left of the hall are entirely separate from the living rooms, while both are conveniently situated as regards bathroom facilities.

In this plan the kitchen is built in the form of an extension or L, but the main roof extends as far as the hip, then drops down to cover the rear porch. This manner of extending the roof does double duty in a way.

The plan of extending the kitchen permits the laying out of the other rooms to advantage, at the same time it provides a splendid, light, airy kitchen with a superior pantry. This jog in the building also makes room for a splendid bathroom having a large outside window in the rear.

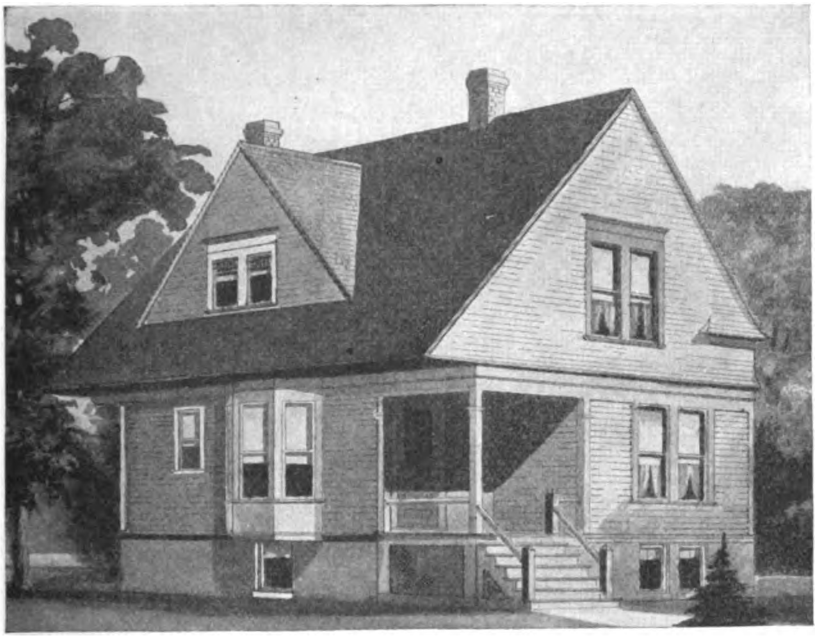
The one front gable and the two dormers provide space for mullion windows to light the upstairs rooms.

A house 31 by 37 feet, arranged in this way, provides comfortable living quarters for a good sized family at very moderate cost.

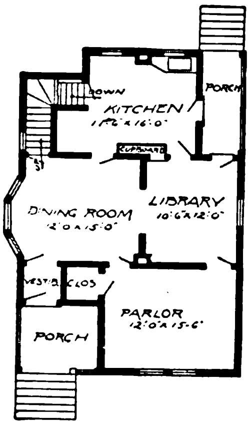


First Floor Plan **Second Floor Plan**

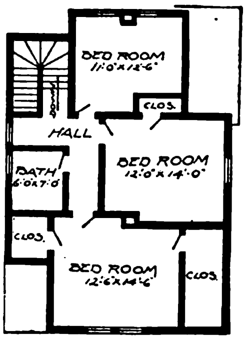
Arrangement of House, Size, 31 by 37 Feet



A cheap house that offers accommodations for a large family. Size, 26 feet in width by 48 feet in length. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of cellar and foundation plan; roof pla; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty-two pages of typewritten matter. When ordering, ask for Design No. 560L.



First Floor Plan



Second Floor Plan

There is no waste room in this plan. Every corner is worked into something serviceable.

Seven-Room Story-and-a-Half House—Design 560L

There is roof enough on this house to enclose three good bed rooms, besides a comfortable bath room, all on the upper floor. The size is 26 by 38 feet, which has been worked into four rooms on the first floor, besides two porches that are covered by the main roof. It is a very economical plan when the amount of room is taken into consideration.

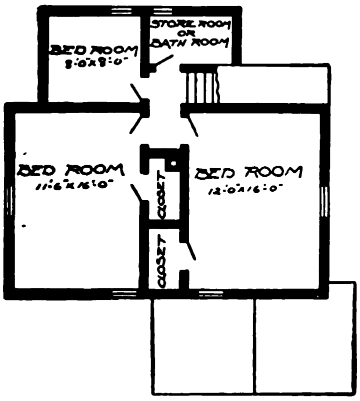
The stairway, which reaches from the cellar to the second floor, is a model of economy and convenience.

Gable Roof House—Design 1539L

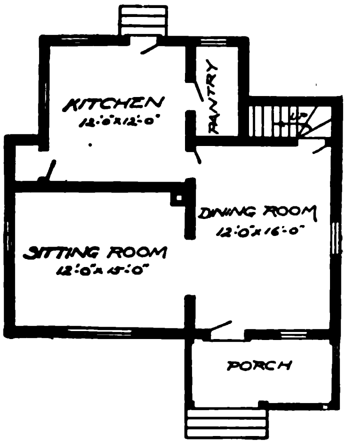
A house having three rooms down stairs and three bed rooms besides a bath room up stairs is shown in Design 1539L. Some people are partial to the gable roof effect.

It is worked out in this design to good advantage. A roof with four gables gives an opportunity to lay out rooms that fit into odd corners.

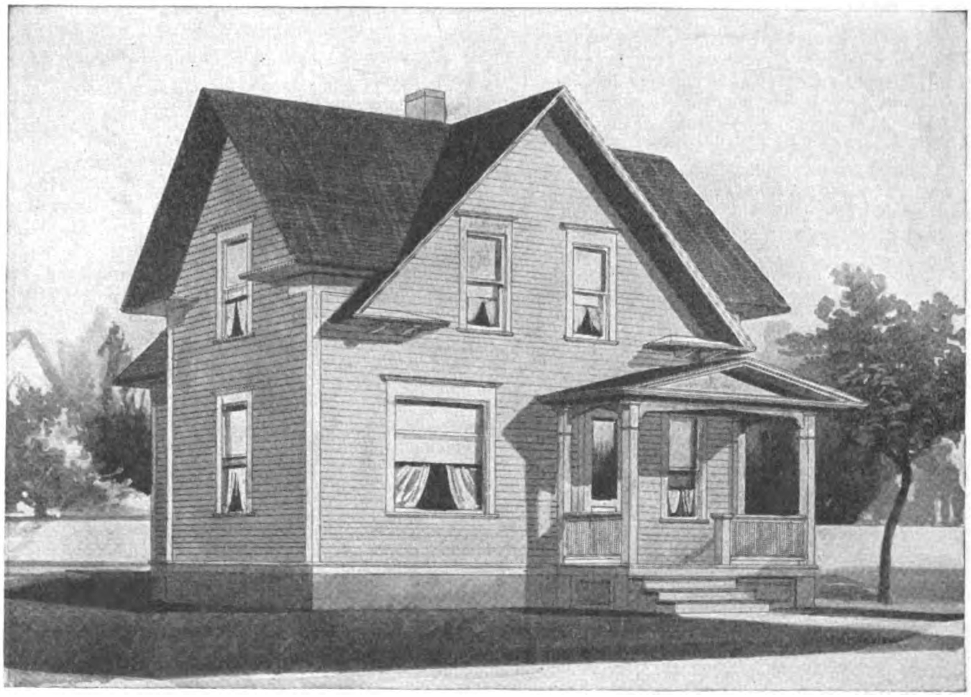
This is a low cost house that looks well because of its proportions. Some houses show better than others which cost a good deal more money. It is owing principally to the design. Of course, the finish has a great deal to do with the appearance of any house.



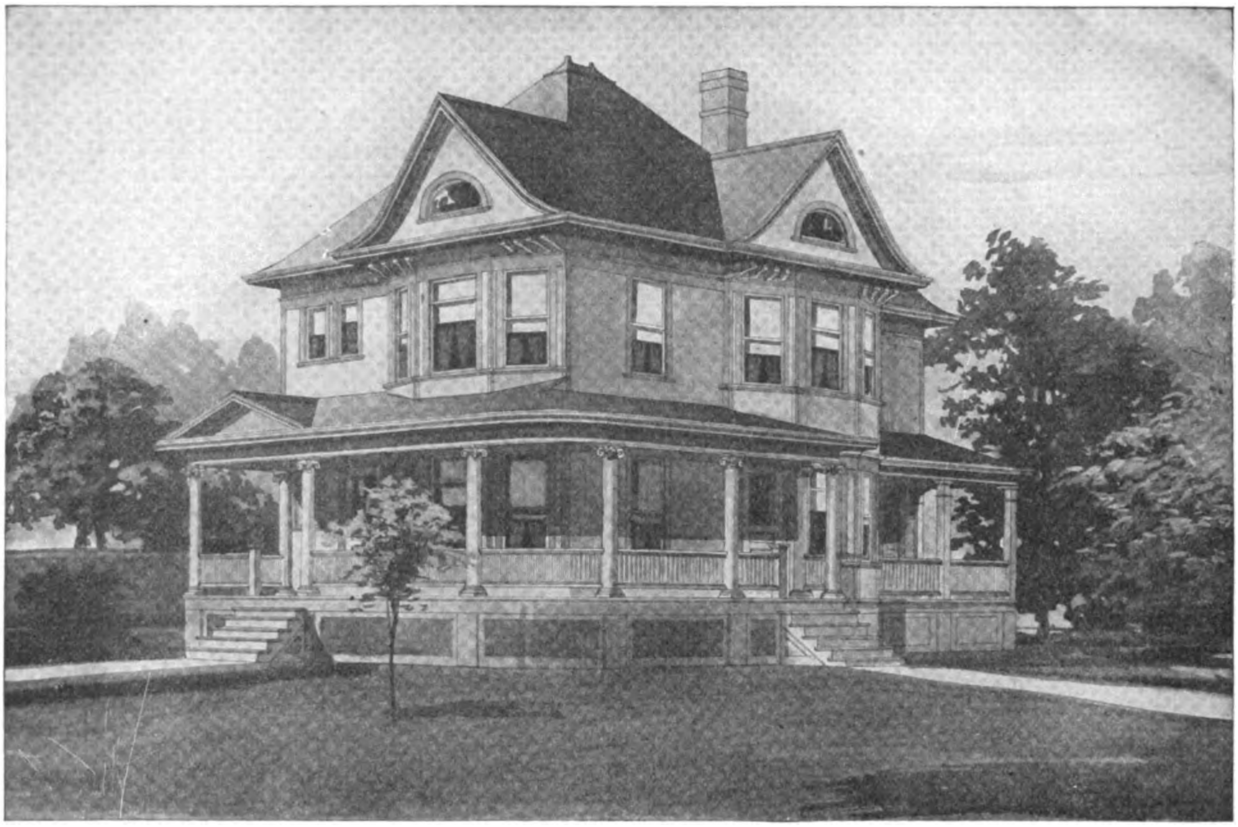
Second Floor Plan



First Floor Plan



A seven-room house 28 feet 6 inches in width by 25 feet 6 inches from front to rear. We can furnish complete set of blue-printed working plans and typewritten specificatins for only $5.00 per set. Blue-prints consist of foundation plan; roof plan; first and second floor plans; frot, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 1539L.

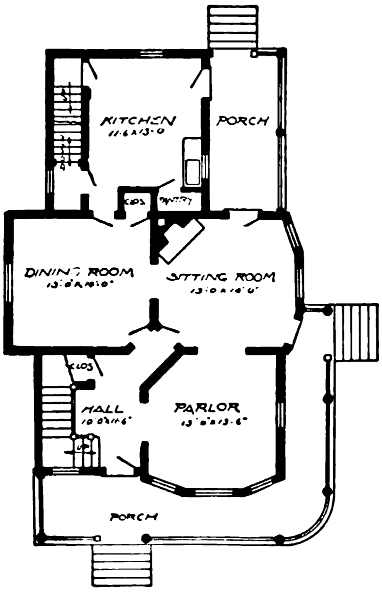


Two-story house suitable for either town or country, carefully planned both for appearance and convenience. Size on the ground is 24 feet 6 inches wide by 44 feet in length exclusive of veranda. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. Blue-prints consist of cellar and foundation plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty-two pages of typewritten matter. When ordering, ask for Design No. 517L.

Popular Two-Story House with Attic—Design 517L

A fine looking two-story house suitable for either town or country is given in this design. The size is 24 feet 6 inches in width by 44 feet in length, exclusive of veranda.

This makes a dandy, nice house that any man or woman would be proud to own. A study of the layout will show that a great deal of painstaking care has been given both to the planning of the first story and second story rooms. The architect has found use for every square foot of both floors.



First Floor Plan

The front stair and the back stair are both built for convenience. In fact, the whole lay-out is arranged to save steps and to provide as much comfort as possible. It is a typical American eight-room house with all the modern improvements and conveniences known to the building trade.

The veranda is a little unusual, but it is intended for comfort in summer and to add to the appearance of the house at all seasons. The side porch is also long enough to be called a veranda, and this really is an outside open air kitchen work-room in summer. There are three outside entrances with cement walks leading to each pair of steps.

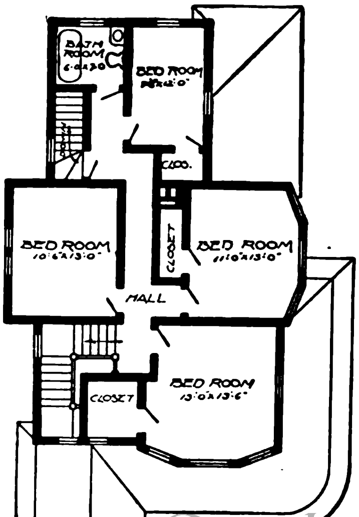
There is a splendid basement under the whole house, which may be divided into store rooms for fruit and vegetables if the house is built in the country. There are families in town who like to store away supplies for winter use after the farmer manner of living.

An interesting feature of this plan is the corner fire-place in the sitting room. With a good mantle a fire-place in the corner helps to furnish the room. It is so different from any other article of furniture, it helps by contrast. An open fire also is interesting as well as comfortable.

The love of an open fire is born into the American branch of the human race. When the country was new, open fires were the only means of heating.

Thousands of people go camping every year, principally for the purpose of getting back to nature and the open fire. They may not realize it at the time, but really most of the enjoyment of camp life is centered around the camp fire.

An open grate fire in the house is the nearest civilied approach to the popular camp fire in the woods. The family possessing a good grate that works right is lucky, especially if one or two members of the family have learned how to manage it.

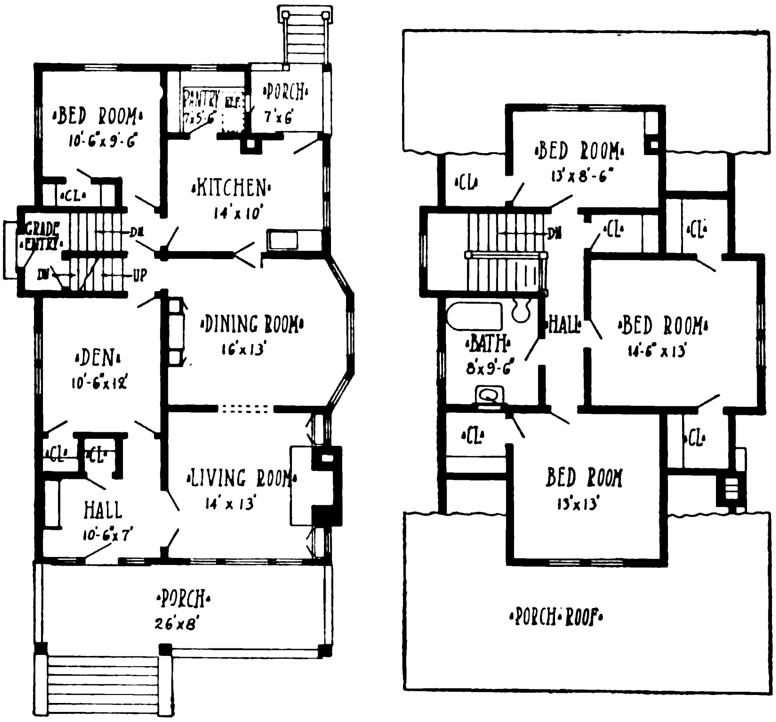


Second Floor Plan

IF your neighbor is going to build tell him about

Story-and-a-Half House with Bungalow Roof

A development in American house building that is very popular in some localities is shown in this design. It is a good looker, principally because it is symmetrical and comfortable. A house owner feels a pardonable pride in his achievement after selecting plans and furnishing the means to build such.



First Floor Plan **Second Floor Plan**

Arrangement of House, Size, 26 by 44 Feet

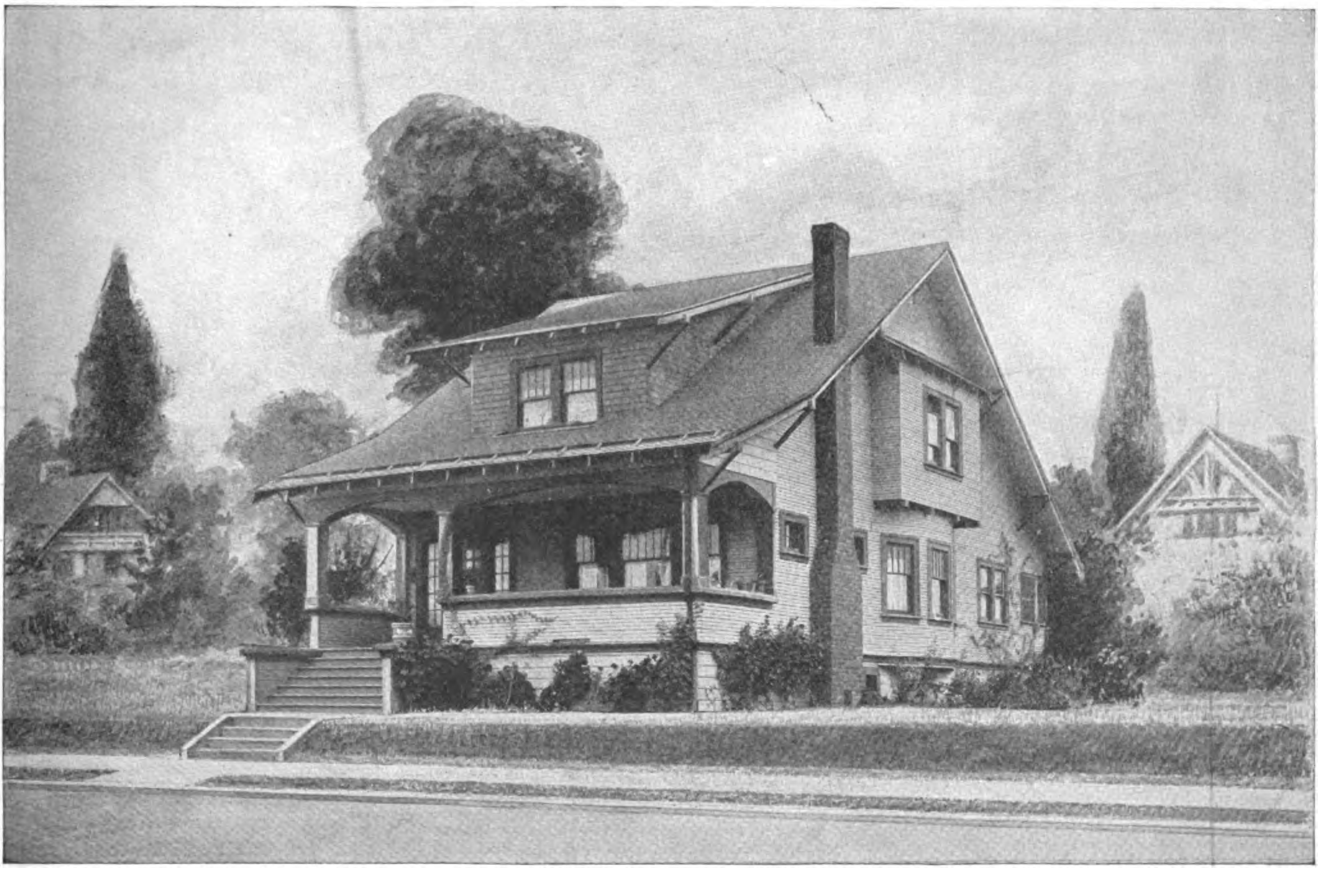
The construction is not necessarily expensive, but the general character of the house calls for good building materials and good workmanship. When finished both contractor and owner are satisfied and are proud of the result.

There are many interesting features. The cellar wall reaches just above the ground line. Commencing at the top of the wall a frame work of 2 by 6 supports the sill at a height sufficient to raise the floor joists 7 feet 6 inches in the clear above the concrete cellar floor. The cellar windows are set in this framework, which permits the building of a solid wall reaching clear around the excavation without a break.

The grade entrance at the side is started even with the top of this low wall so that the steps down give easy access to the cellar and the steps up give easy access to the kitchen through the back hall.

The plan shows four living rooms and a bedroom downstairs besides front and side hall and a built-in rear porch.

Upstairs there are three splendid bedrooms and a fine large bathroom. The front and rear bedrooms are made possible by dormer windows, one on the front, the other on the rear slope of the roof. These dormers are made wide enough to hold double mullion windows.



A beautiful eight-room residence of story-and-a-half design. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6652L.

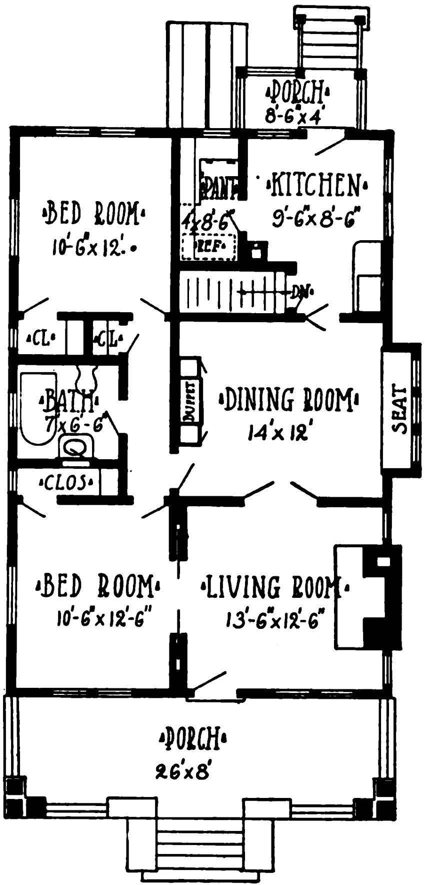
Bungalow for Small Family

Three good sized family rooms and two splendid bedrooms are laid out on the floor diagram of this attractive bungalow. The main part is only 26 bv 38 feet, 6 inches in size, but the veranda across the front adds another ten feet to the depth of the building.

This veranda, by the way, makes an interesting summer addition to the gungalow, both as regard comfort and looks. Being covered by extending the main roof, it snuggles up close to the house proper in a comfortable, sociable manner, suggestive of ease and luxury.

This plan provides a good cellar with walls high enough to provide head room for a warm air furnace. There is an outside entrance to the cellar at the back, which is a great convenience when putting fuel into the cellar and when carrying out ashes. Again, on washdays, an outside entrance is appreciated. It is much better than a window to let air into the laundry and to let the sudsy smell from the clothes boiling float out into the atmosphere instead of penetrating up through the house. Also it makes an easy exit to the clothes line in the back yard.

Bungalow cellars are larger than house cellars, and they should be well used to get returns for the extra excavation and cost of walls.

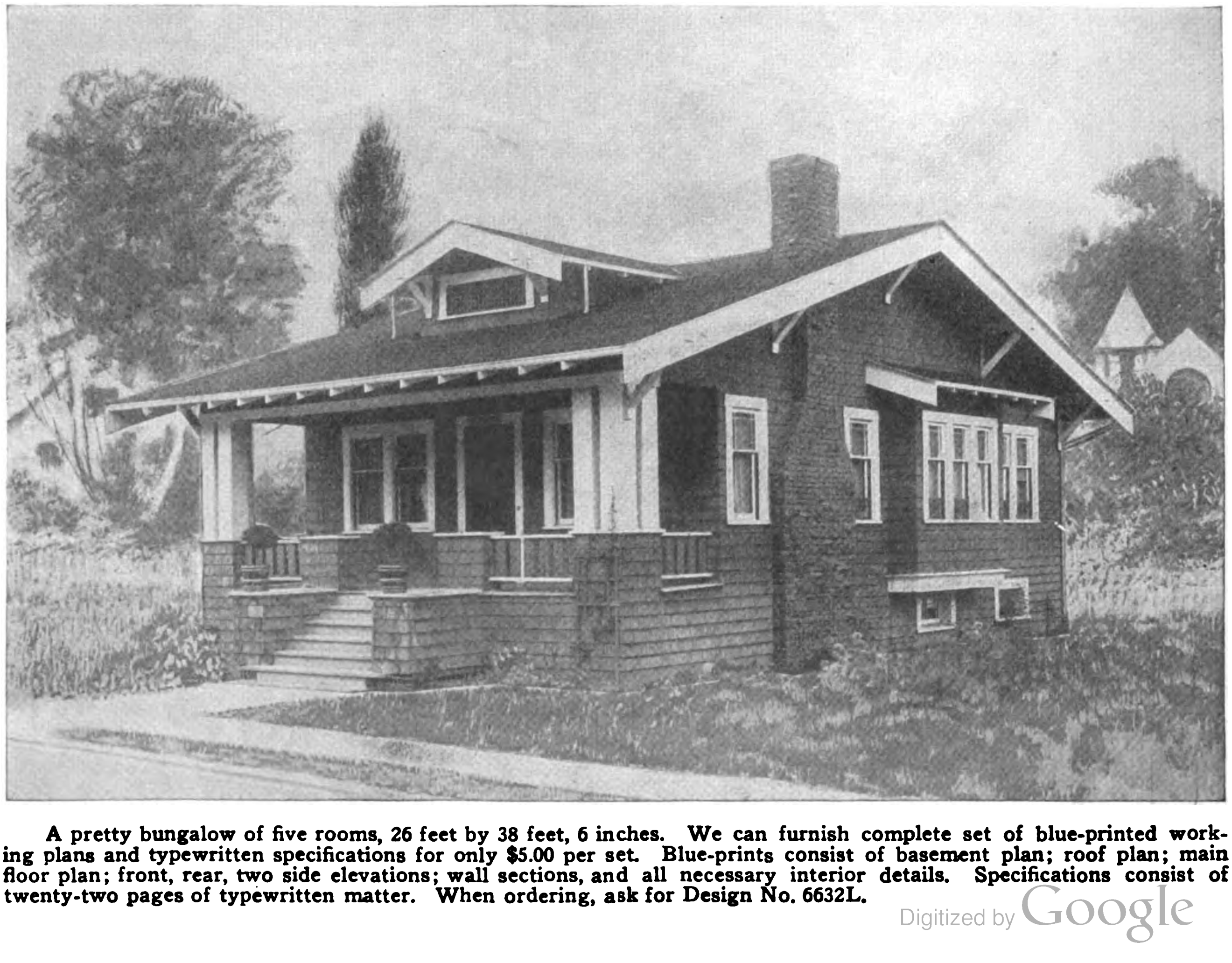


Main Floor Plan
Size, 26 Feet by 38 Feet 6 Inches

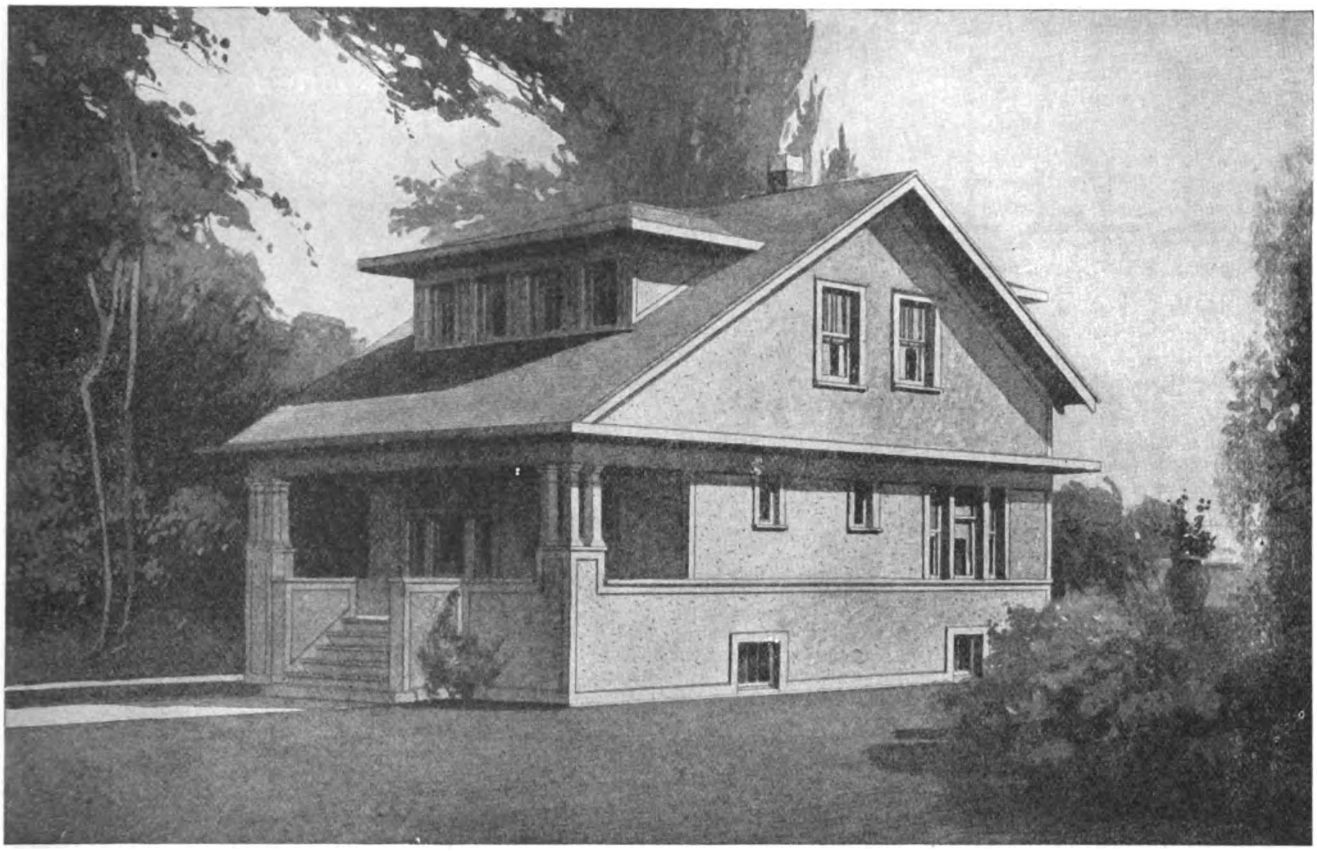
The construction of this beautiful bungalow above the cellar wall is of the usual sills, joist and 2 by 4 studding, boarded outside with ship lap. Next is layer of building paper, worked around the windows in such a way as to double the important places. The window frames are made to include shingles under the outside casings, so the shingles are fitted close up to the frames and the casings close against the shingles. The shingles are nailed on the same as the roof, except that a greater butt surface is exposed to the weather.

Rough finish, dark brown brick are used for the chimney, because the effect matches up well with the shingle siding. The roof has a little steeper pitch than the regular bungalow construction calls for. Typical bungalow construction requires a very low ridge pole with roofs of slight pitch, but practically the rainfall must decide how a roof should be inclined.

The living rooms are on the sunny side of the house, with one doorway and an archway connection between the living rooms and sleeping rooms. The archway is built for the purpose of making the front bedroom into a library when only one bedroom is required. Both bedrooms are corner rooms, which gives an abundance of light and ventilation.



A pretty bungalow of five rooms, 26 feet by 38 feet, 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of basement plan; roof plan; main floor plan; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6632L.



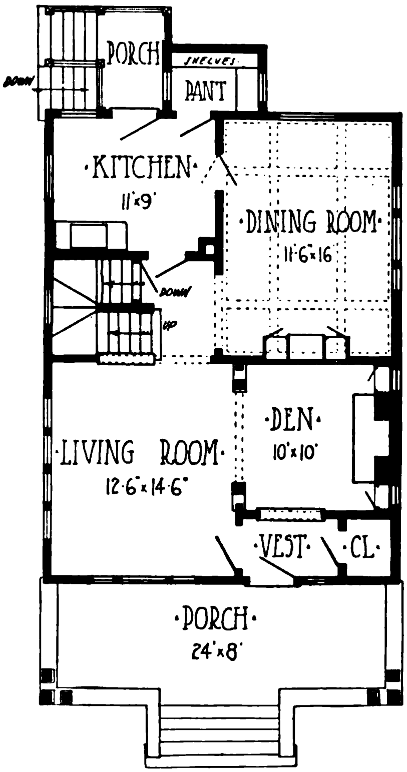
Seven-room cement stucco cottage. We can furnish complete set of blue-printed working plans and typewritten specifications for only $10.00 per set. Blue-prints consist of basement plan; first and second floor plans; roof plan; front, rear, and right and left side elevations; wall sections; and all necessary interior details. Specifications consist of 22 pages of typewritten matter. In ordering, mention Design No. 6555L.

Seven-Room Cement Stucco Cottage

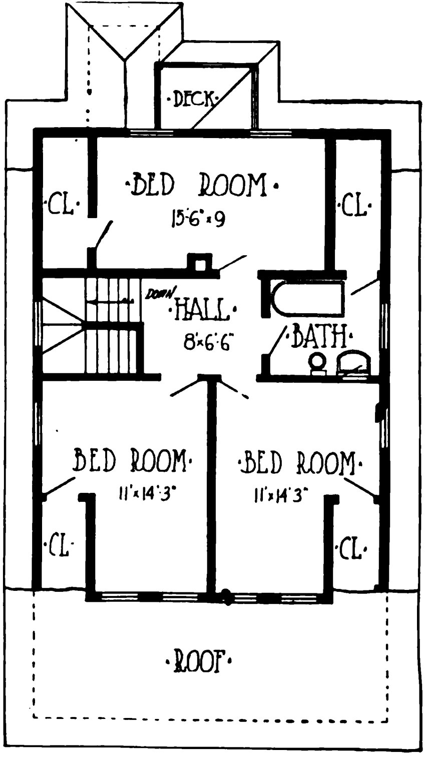
It is the people who live in a house that make the true atmosphere of a home, and give the place that personal touch of human interest and hospitality without which even the most ornate residence is an empty shell. And yet there is something of supreme value in the very design of the house itself, for it should form a fitting and dignified environment for its occupants.

The design here shown has all the requirements o fa true home for a moderate-size family. It would look well in spacious grounds, but is adapted to a narrow lot. The exterior finish is in cement plaster, which may be delicately tinted, if desired, and relieved by harmonious color contrast in the wood trim. The size and layout of the rooms are very clearly shown in the diagrams.

The entire front of the house is given up to a large living room, and a den with fireplace, the living room being entered from the vestibule opening off the porch. A central hallway, at rear of living room, connects it directly with kitchen and beamed-ceiling dining room. From it, also, stairs lead to basemen and second floor, on which bathroom is centrally located off the hall and within easy reach of the two front bedrooms, as well as the rear one. All the bedrooms are well lighted, and each has a large closet.

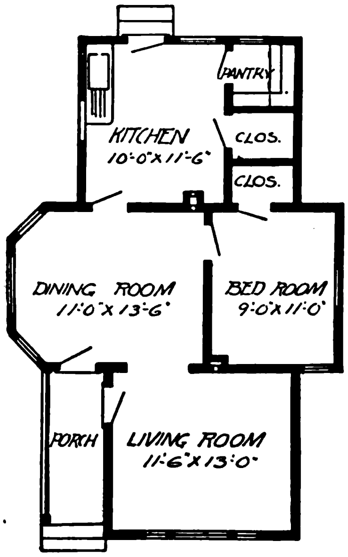


First Floor Plan

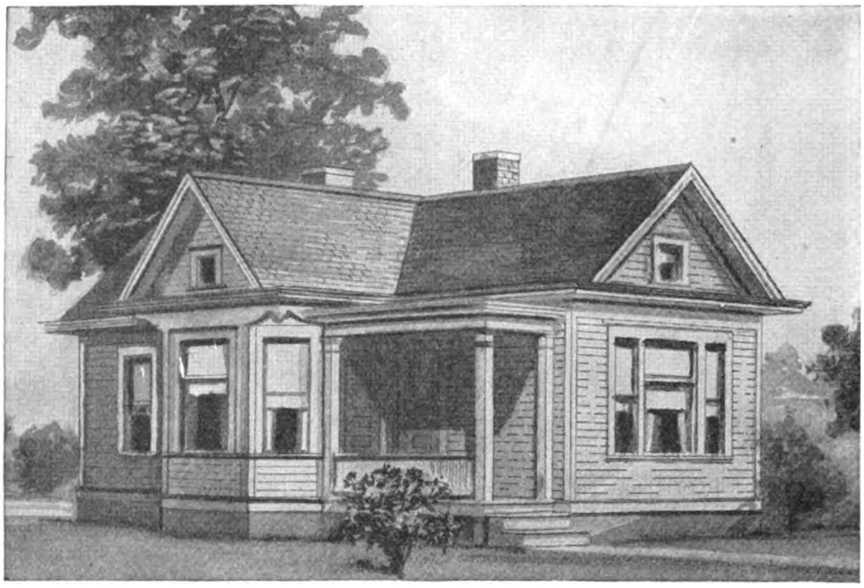


Second Floor Plan

Seven-Room Cement Stucco Cottage. Size, 24 by 40 Feet, Including 8-Foot Front Porch.



Floor Plan



Four-room cottage house. Size 24 feet wide by 36 feet in length. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of foundation plan; floor plan; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of about twenty-two pages of typewritten matter. When ordering, ask for Design No. 2020L.

Country Cottage—Design 2020L

The word cottage is an elaboration of the old English word "cot." It is much used at the present time in some parts of England when referring to small, one-story houses of neat appearance and low cost.

In some parts of the United States, the word is misused to name great wandering summer palaces costing large sums of money.

This design is rather English. It has four rooms with a very neat corner porch covering two outside entrance doors, one to the living room and one opening into the dining room. The plan is very convenient and may be made very comfortable for a small family.

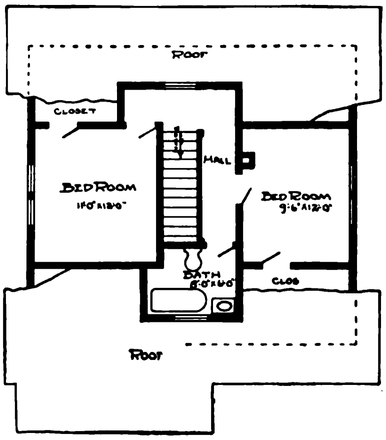
Five-Room Story-and-a-Half House—Design 7024L

Design 7024L represents a very comfortable five-room house. The large porch has rather a massive appearance which adds to the house the feature of solidity, an effect that is difficult to obtain in a small house.

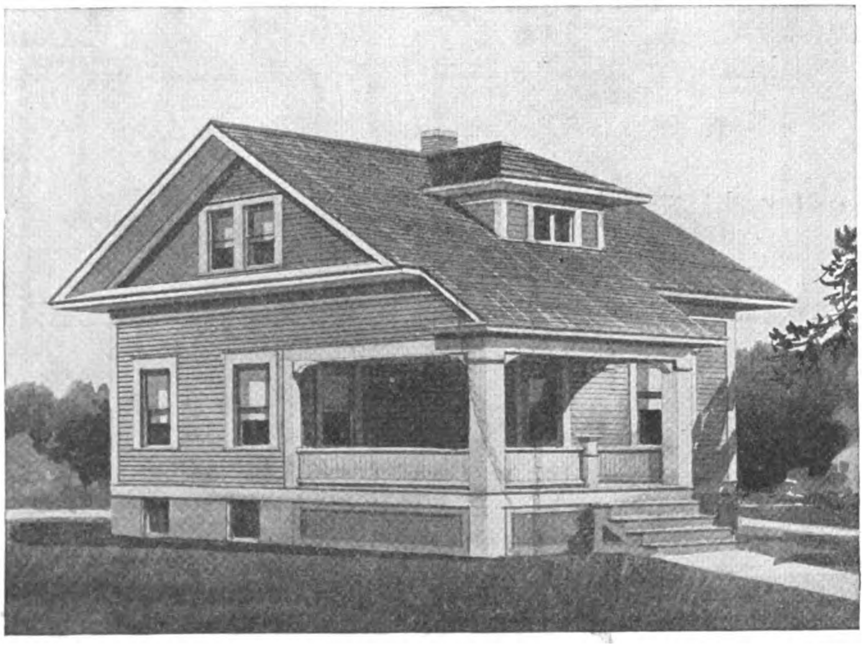
The living rooms are on the first floor with two bed rooms and the bath room tucked away up under the roof.

This arrangement gives a great deal of floor space to the bed rooms and living rooms. There also is plenty of kitchen and pantry room. The stairway to the upper floor is so built into the partition that it takes up very little room.

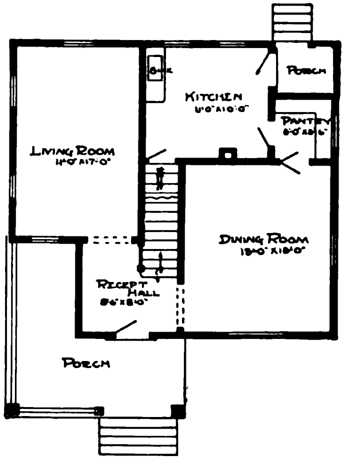
This little house looks well from the street and it looks well from every other direction. The design is a good one.



Second Floor Plan



Five-room, one-story and a half house of exceptionally fine appearance. Size, 29 feet in width by 26 feet 6 inches in length. We can furnish complete set of blue-printed working plans and typewritten specifications for only $5.00 per set. Blue-prints consist of basement plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 7024L.



First Floor Plan

Seven-Room Gambrel House for Narrow Lot

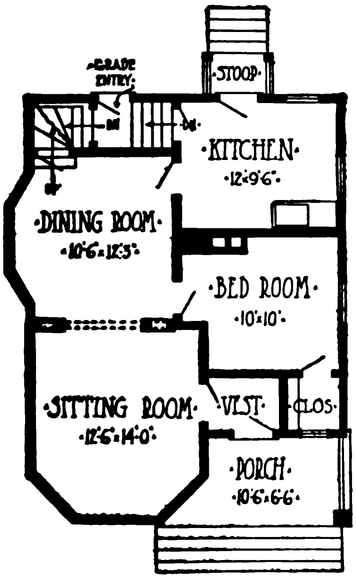
All things considered, the gambrel roof house works out best for the moderate cost dwelling where every inch of space must be utilized to the best advantage. The rooms on the second floor are full size, and yet, being "under the roof" they don't cost very much.

Much depends on how a gambrel house is designed. This one is in perfect harmony with itself. The large octagon bay in front, and also the one at the side seem to go naturally with the shape of the roof.

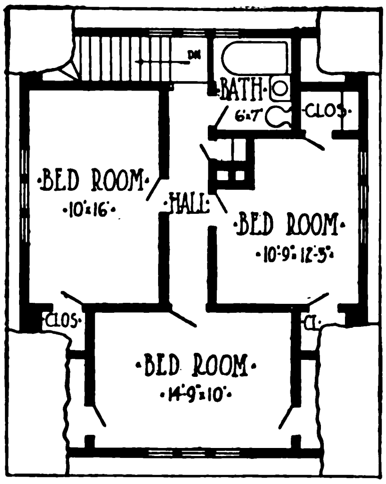
Nicely arranged small residences to go on a narrow lot are scarce. This design measures only 24 feet in width. The length is 31 feet 6 inches. On the first floor are four good rooms; sitting room and dining room opening together, conveniently arranged kitchen, and a small down-stairs bedroom with clothes closet.

This is a snug home for cold climates, as the front porch is so well protected, and the vestibule keeps the cold air from the entrance out of the sitting room.

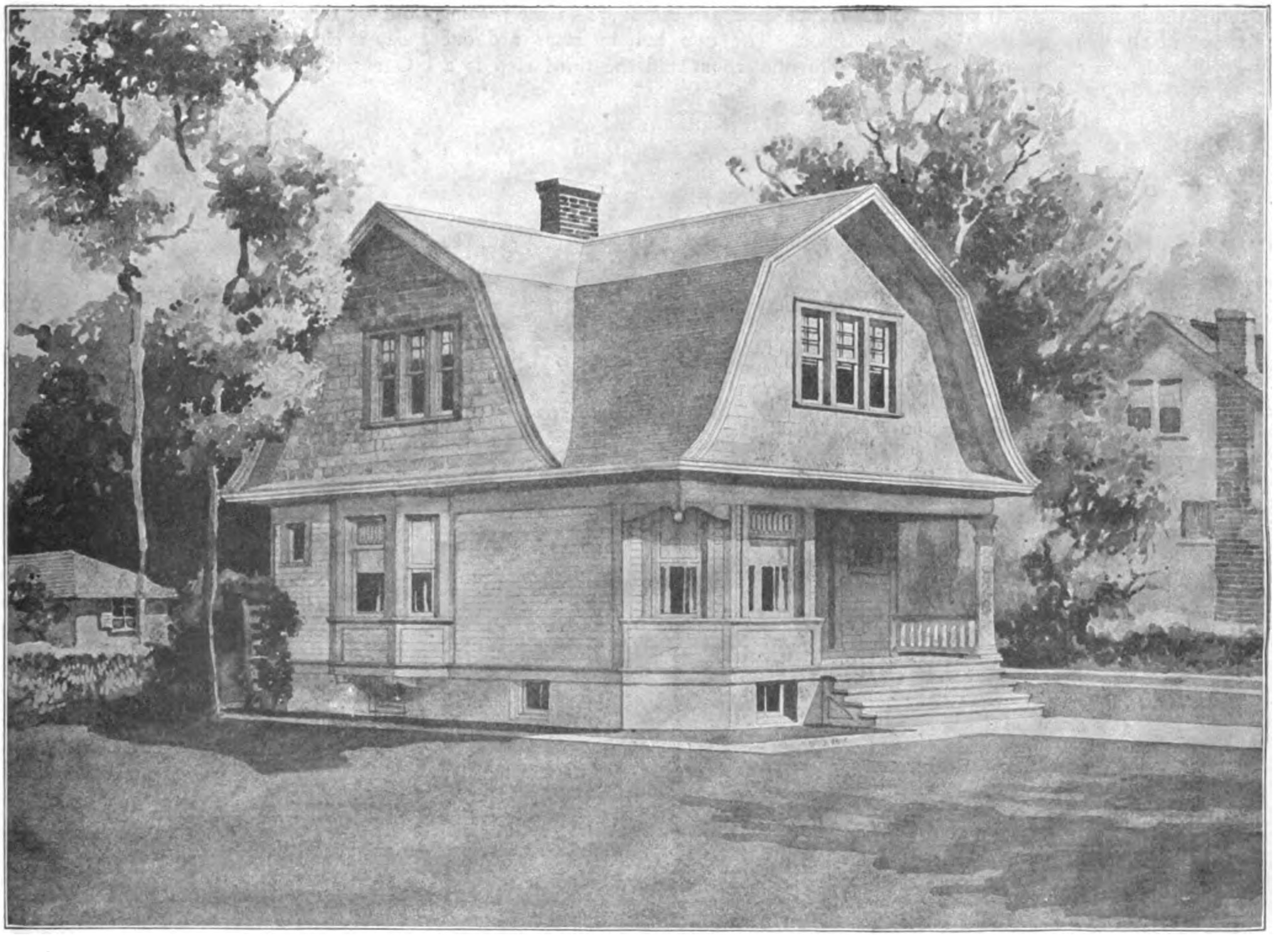
There is no reason for giving up the best part of a house to the stairway. Here the stairs are placed at the rear. They go up from the dining room, which is handy and desirable in a house of this size. On the second floor are three good sized bedrooms, bathroom, and six clothes closets.



First Floor Plan



Second Floor Plan

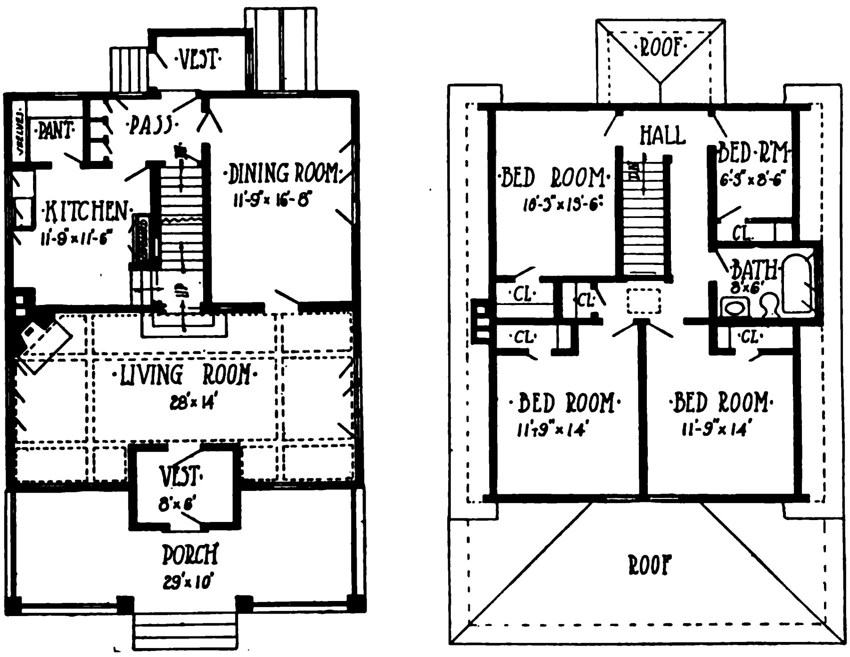


Seven-room gambrel roof dwelling. Size, 24 by 31 feet 6 inches. First story sided; gable ends and roofs shingled. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. Blueprints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. Ask for Design No. 6542L.

A Seven-Room Gambrel Roof Residence

A well designed little home structure that gives a big value for its cost is the seven-room gambrel roof frame dwelling illustrated. A paneling effect has been worked out for the sides of this house that gives it a rather unusual appearance. Little touches of this kind can, of course, be used or omitted, just as the builder prefers. When handled neatly, they often add considerable to the attractiveness of a building. In this instance, the paneling harmonizes very well with the style of porch column used.

The gambrel roof continues a popular style for medium-sized homes. It makes a good appearance when the two slopes to the roof are properly proportioned, and while allowing full use of the upstairs, does away with the expense of the third-story attic.

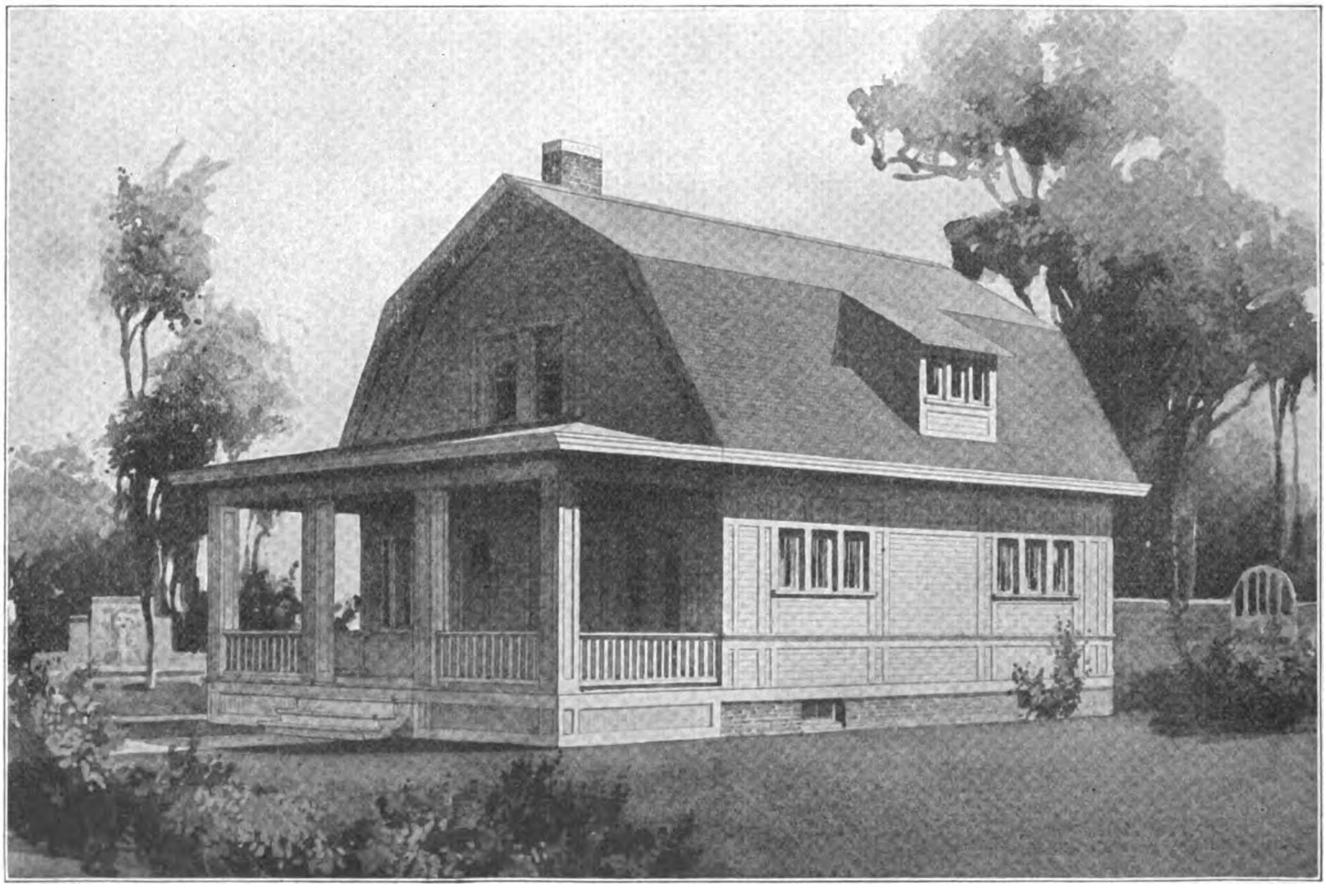


First Floor Plan **Second Floor Plan**

Arrangement of Seven-Room Gambrel House, Size, 29 by 32 Feet

This house is 29 feet wide by 32 feet deep. A 10-foot porch extends clear across the front; and inside, the large living room, 14 by 28 feet, occupies the entire front of the house. Note the way the vestibule is worked in, half of it coming out of the porch space and half out of the living room. This vestibule will add 50 per cent to the warmth and comfort of this living room in the winter time.

Directly across from the vestibule entrance door are the stairs to the second floor. The two bottom steps are out into the room and the third step is a platform landing. A single sliding door closes this stairway opening when desired. Steps lead up to this landing out of the kitchen also, and this doorway is closed with a single sliding door. One seldom sees a better arrangement.



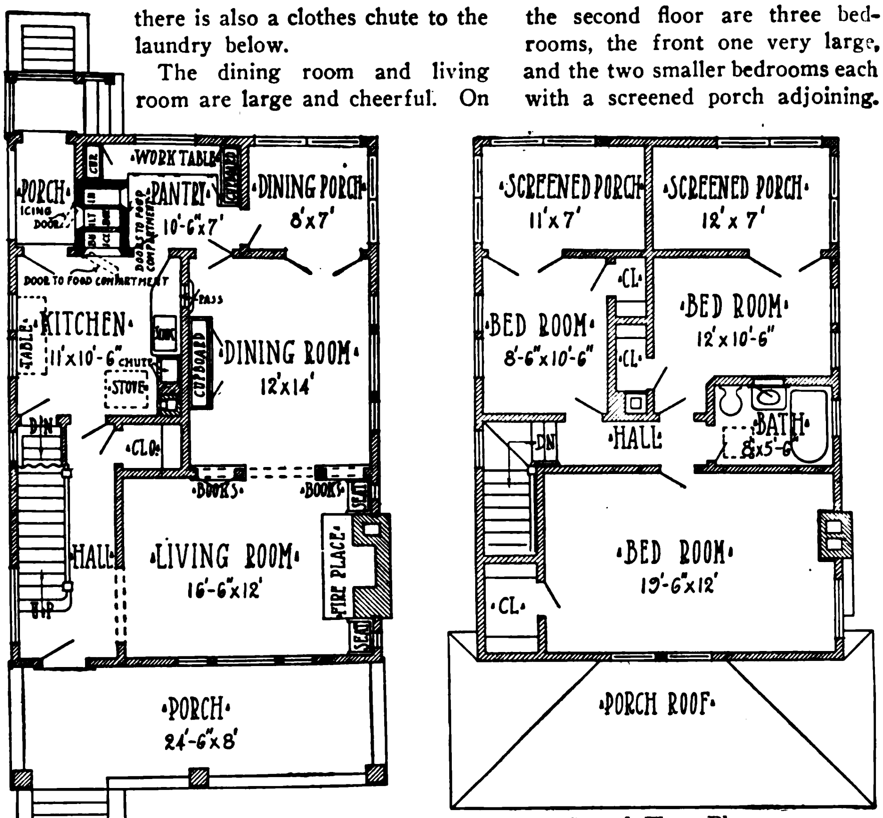
Substantial gambrel roof seven-room residence. Size, 29 by 32 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6559L.

Home with Special Kitchen Conveniences

Realizing the importance of the refrigerator and its proper placing, we have prepared the accompaning set of plans, working in just the opposite from the ordinary way. Instead of beginning at the front of the house and working back, assigning whatever odds and ends of space there might be left (after planning the front rooms) to the kitchen and pantry, we began by laying out a model kitchen and pantry containing a built-in-place refrigerator, all planned exactly as we believe the business end of the home should be planned; and after that was accomplished the remainder of the design got what was left. The result is certainly a model of a six-room modern residence.

Make a careful study of the accompanying floor plans. Note the convenient arrangement of the kitchen with its well-lighted work table, sink and drainboard right by the range; see the extra large, well-lighted pantry with work table and cupboards, and equally short distance into either dining room or screened porch, which is used as a dining room in warm weather. The cellar stairs go down out of the kitchen, and there is also a clothes chute to the laundry below.

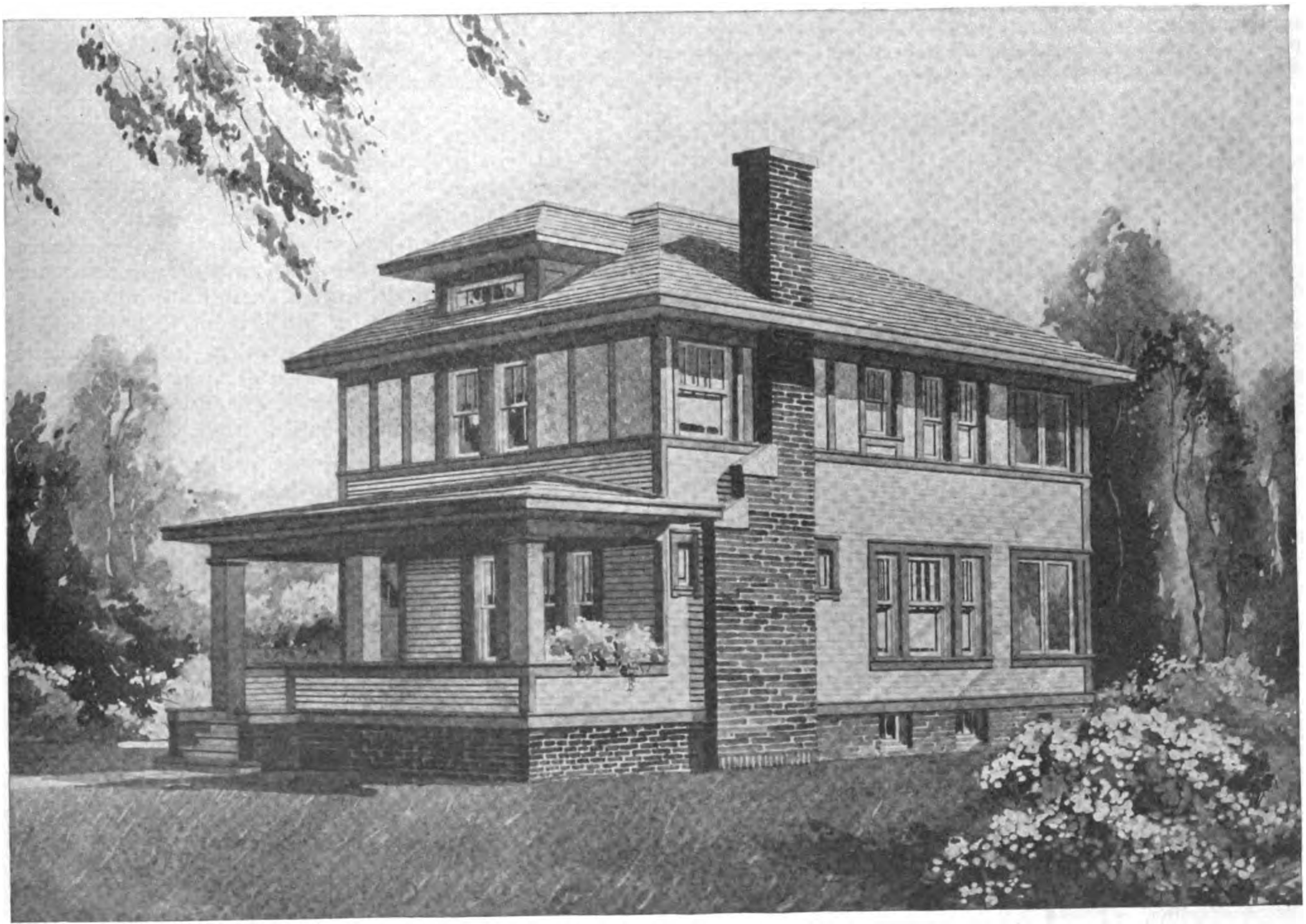
The dining room and living room are large and cheerful. On the second floor are three bedrooms, the front one very large, and the two smaller bedrooms each with a screened porch adjoining.



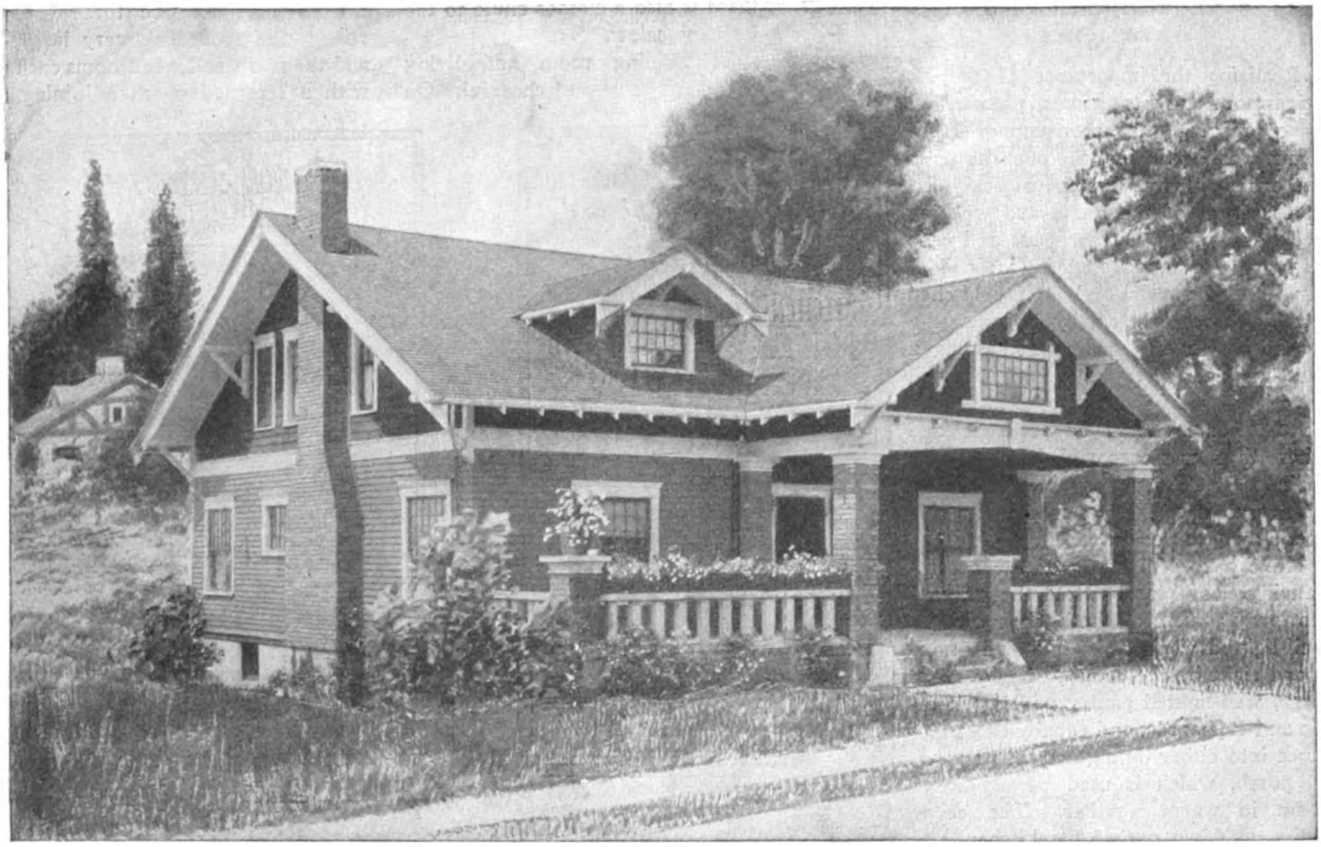
First Floor Plan

Second Floor Plan

Arrangement of Residence, Size, 24 Feet 6 Inches by 35 Feet



Modern six-room residence featuring built-in refrigerator of special convenience. A very interesting design. Size, 24 feet 6 inches by 35 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations, wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6629L.



A seven-room story and one-half house; 38 feet in width by 25 feet 6 inches in depth. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6635L.

Comfortable Town Home

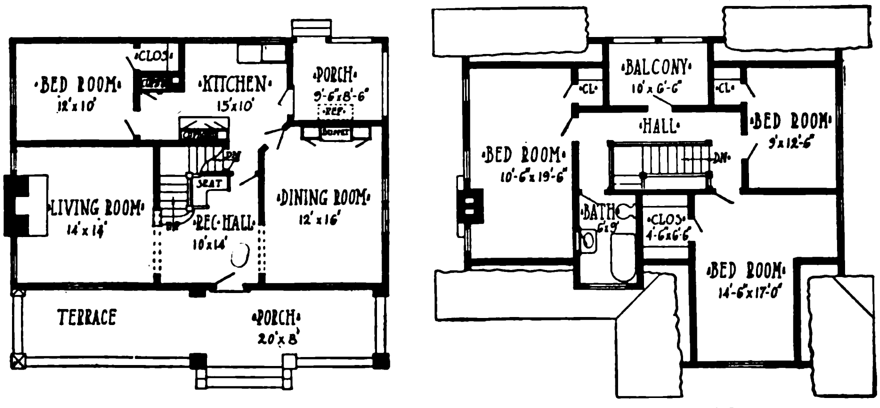
A story and one-half house of neat design and attractive appearance is shown in design 6635L. It is 38 feet in width by 25 feet, 6 inches in depth, exclusive of the front porch. This front porch is unusual by being merged into an open air extension that reaches to the corner of the building with a total length of 38 feet by 8 feed in width. There is a cement floor which slopes slightly outward to carry off the water from rain or melting snow.

Dark colored brick are used for the corners of the porch wall and square roof supporting columns. The same kind of brick are used in the exposed chimney at the end of the house. Uniform caps for all the columns are made of high grade cement, carefully moulded to the proper size to project slightly beyond the brick work. A similar chimney top is used for the finish of the large chimney.

This style of house is what might be called a story and one-half cottage design; but it is quite roomy. The floor plans show the usual living rooms on the first floor, besides an extra bedroom. The living room, reception hall and dining room are connected by wide archways, ~~so the~~ three rooms are almost like one big room extending across the house. A handsome stairway in the reception hall with a seat in the corner gives the impression of size. A passage way from the reception hall to the kitchen is closed by a doorway built under the turn in the stair. The entrance door to the cellar is also in this little passageway, and is easily reached from the front part of the house.

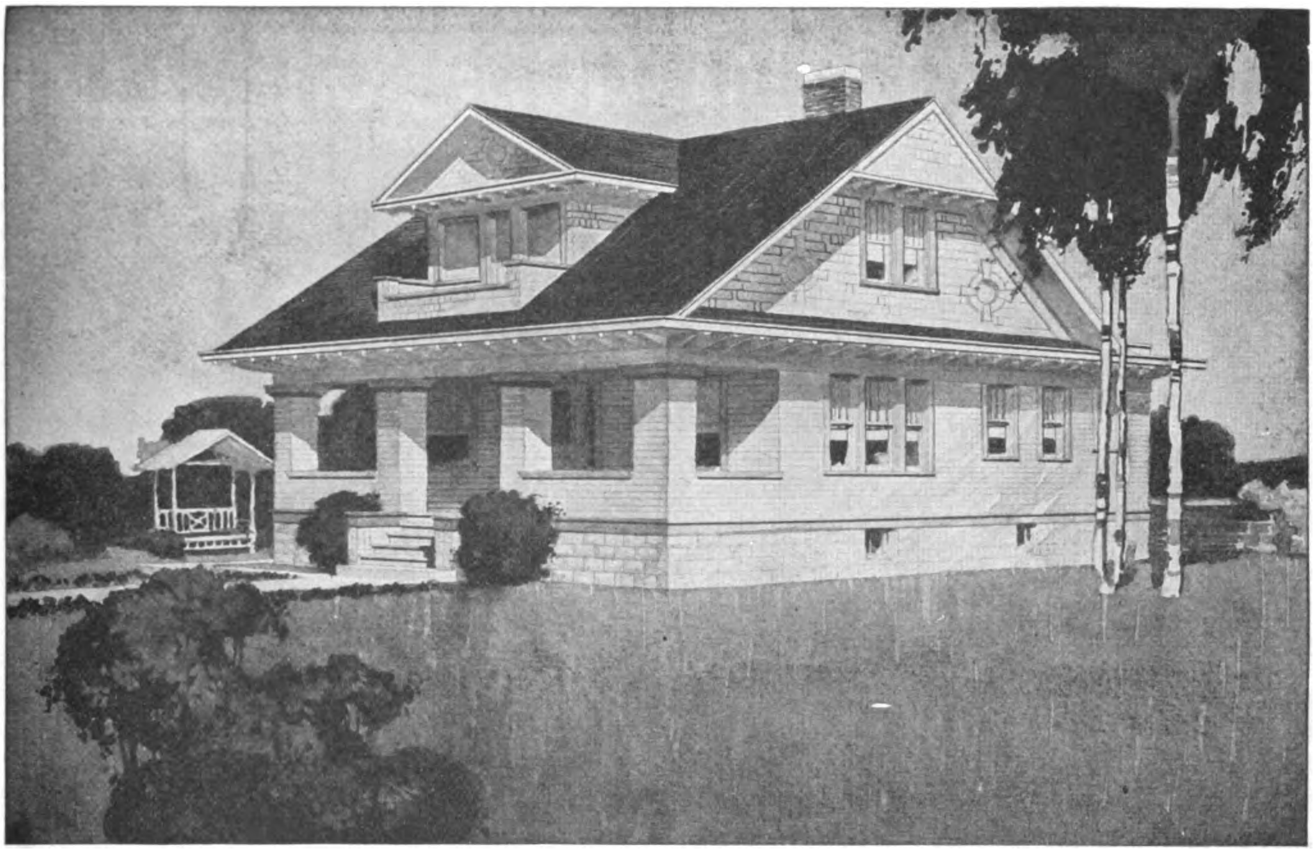
There is no regular pantry, but there are plenty of cupboards and a kitchen cabinet to provide necessary storage for kitchen paraphernalia. There also is a splendid buffet sideboard built across the end of the dining room. It is supposed that a glass cabinet will be placed at the side of the dining room between the buffet and the mullion window to provide additional storage for china.

In building an open stairway, such as this plan calls for, there is a splendid opportunity to select millwork designs that harmonize with the trim throughout the house. Certain kinds of woods are used for inside finish, and these kinds differ in different parts of the country. Millwork is made in patterns to match. The exact designs may differ, but the general idea is carried through to include window and door trim, cornice mouldings, and exposed parts of the stairway. It costs no more to have woodwork matched up properly.



First Floor Plan **Second Floor Plan**

Arrangement of House, Size, 38 Feet by 25 Feet 6 Inches



A splendid Country or Village Home of seven rooms, with all necessary modern improvements. Size is 34 by 36 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $6.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6620L.

Splendid Country Home

Design No. 6620L would look well in the country as a suburban home or in the residence section of a good village. An inside wide lot in the city might be selected, but a big corner lot would display it to better advantage.

There are two great gables. Gables offer splendid opportunities to vary architectural details; but variations are not always so ornate as the treatment of these gables. The deeper recess of the lower part of the pediment produces a sort of New England renaissance that harks back to the blending of old world ideas with the freedom of American pioneer practice, the practical feature of the combination being storm protection.

Extending the roof to cover the large front veranda is economical as compared with building a separae roof. Large square front pillars like these are massive enough not only to support such a roof, but to convey the impression of solidity.

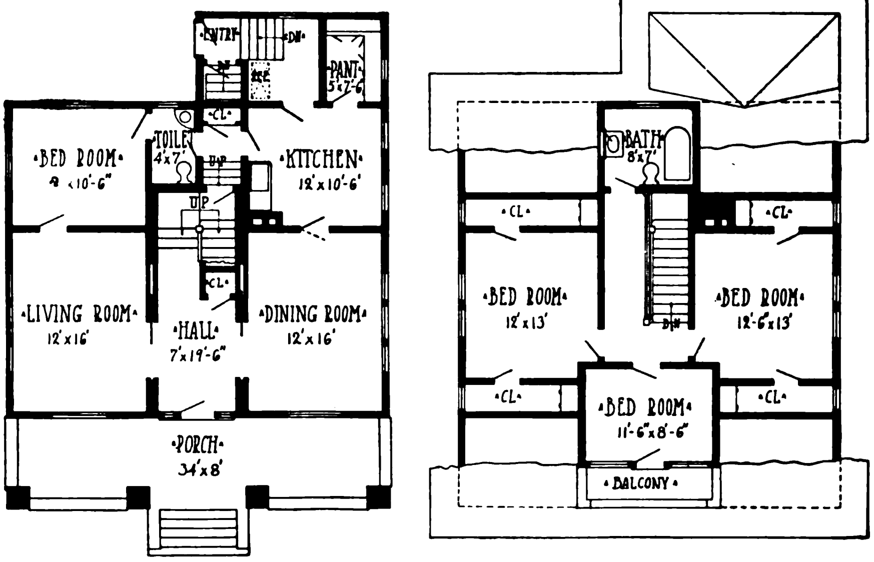
Square treatment of porches, verandas, and loggias is noticed in every part of the United States. It generally leads to the solid base, and the doing away in great measure with open rail and baluster work.

The fashion was brought about by the modern veranda parlor idea, whereby rattan tables, chairs and swinging seats are used in connection with grass mattings to furnish outdoor rooms.

The introduction of good furniture as a porch parlor proposition demanded more protection than the old-fashioned narrow verandas afforded. So the square opening idea was launched because these openings could be easily fitted with screens and with glazed sash.

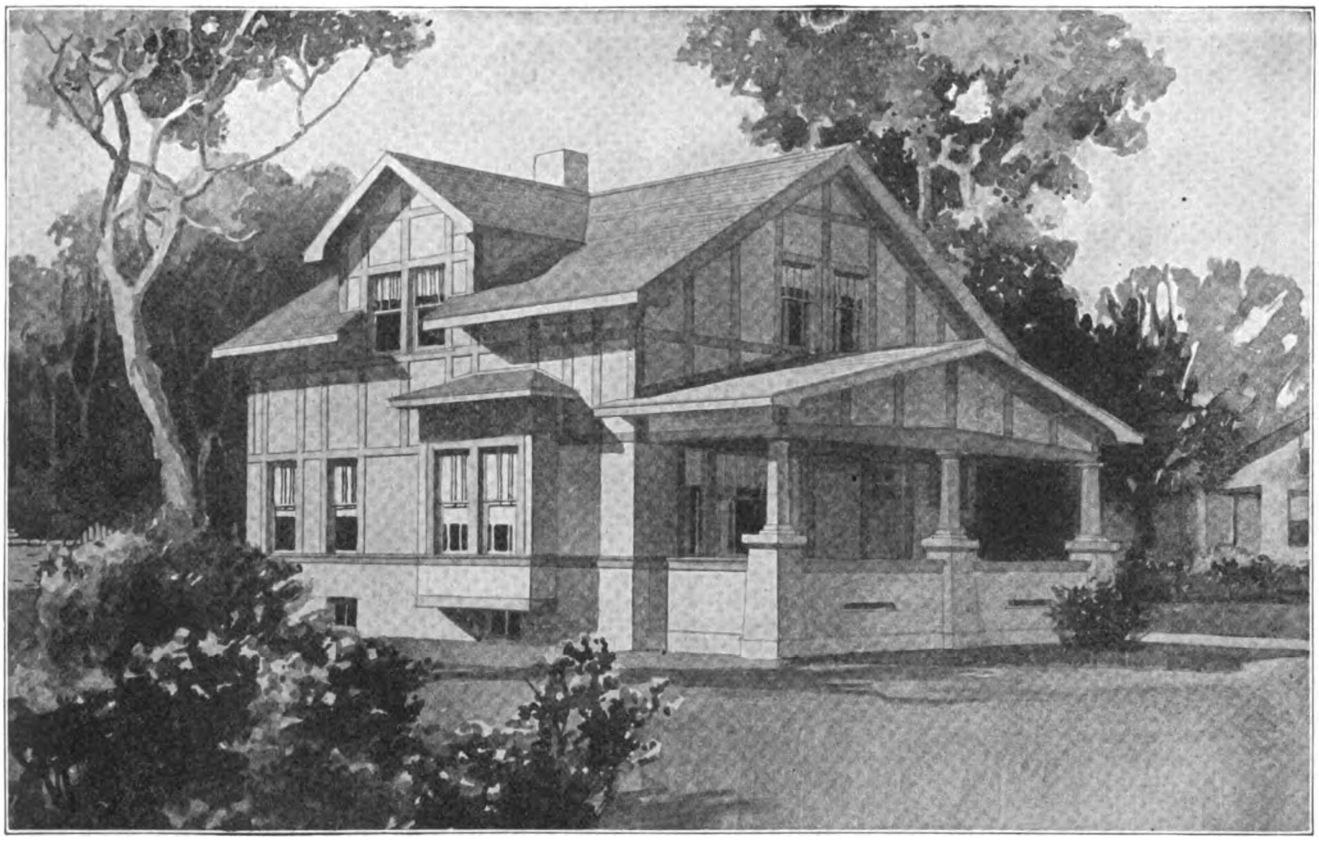
In this design the architect has planned four rooms downstairs and three rooms on the second floor under the high part of the roof. The elevation of the peak is sufficient to make head room for good sized bed rooms; but a dormer in front is necessary to arrange for the third bedroom and a similar dormer at the back gives head room for a comfortable bathroom. In this design a combination stairway is partitioned in with a door on the central landing, which shuts off the kitchen steps from the front approach. This door is supposed to remain closed; but in practice it is appreciated as a rather superior ventilator.

A good feature of this design is the grade entrance at the back which is convenient for cellar and ice box. It is apreciated by good housekeepers who like to keep the ice-man and vegetable man out of the kitchen.



First Floor Plan **Second Floor Plan**

Arrangement of House, Size, 34 by 36 Feet



Artistic six-room stucco residence with English half-timber paneling. Size, 28 by 33 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. Ask for Design No. 6544L.

Stylish Six-Room Paneled Stucco House

The popularity of cement plastered or stucco houses continues. This one is given an ornamental appearance by the use of exposed timber paneling in the upper story. This is known as English half-timber work, although the construction is, of course, different from the old Elizabethan work after which it is modeled.

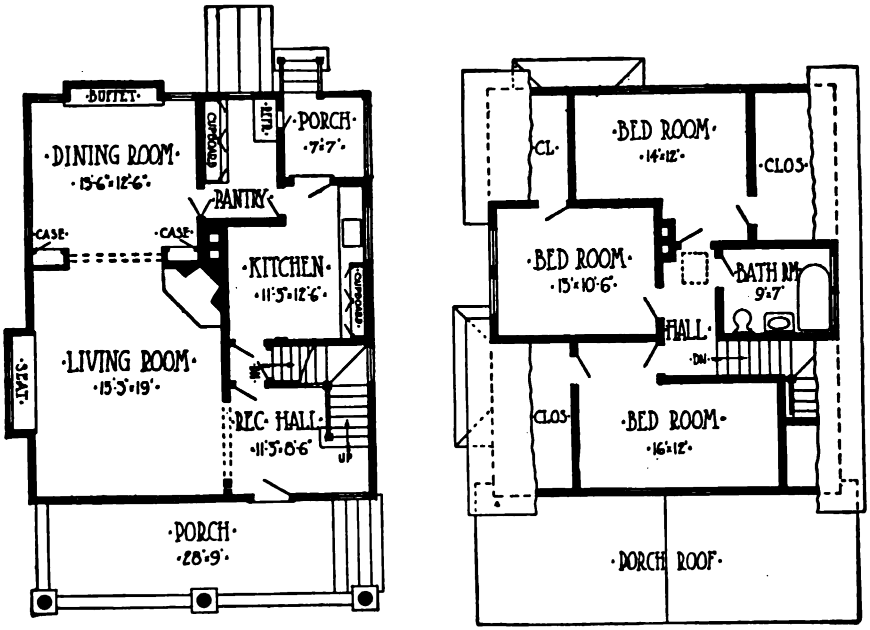
Imagine this residence with cement work painted cream color or tan, and the trim painted dark brown or olive green. Or many prefer to leave the cement its natural gray color, painting the wood trim to contrast strikingly.

Of stylish up-to-date exterior, the inside arrangement of this house is in every way modern, making good the promise of the outside. Entrance from the porch is into a square reception and stair hall. To the left is the large, well lighted living room with open fire place in one corner. The dining room is in the back. Although centrally located, the kitchen is well insulated from the other rooms. The pantry separates it from the dining room and the cellar stair hall from the front of the house. This effectively cuts off both noise and cooking ordors.

Housewives will approve of this kitchen with its broad, well lighted work shelf and sink, and handy built-in cupboard. The refrigerator is in the pantry, and is iced from the back porch.

On the second floor are three good sized bedrooms, bathroom, and three extra large closets.

The outside dimensions of this house are 28 feet by 33 feet, not including porches. This makes a very desirable residence for a city or suburban building lot of 30 feet or wider. While it is a decidedly economical house to build, it has an up-to-date "dressy" appearance which discriminating home builders appreciate. The story-and-a-half treatment keeps the lines of the building low and broad. This place would never have that bleak appearance, so often carried by taller houses, especially when new, before the shrubbery has had time to grow.



First Floor Plan **Second Floor Plan**

Arrangement of Residence, Size, 28 by 33 Feet

California Bungalow

California is the home of the bungalow. Cool evenings and cold mornings, green winters and brown summers characterize the climate from south to north and from the Sierras to the coast range.

A little fire in the grate feels comfortable once or twice a day in spring and fall and a little heat is absolutely necessary to a tenderfoot in winter.

But about this particular bungalow design—there is no law against building it in any other state and that is why we have planned a cellar the full size of the house.

In California the natives are too proud to admit that they need a cellar, but sensible fellows in other states build after this plan and take great pains to make the cellar a very important feature.

The plans call for 7½ feet of head room in the cellar, to give the proper depth for a warm air furnace, which is usually placed about in the center of the plan, some 10 feet from the kitchen chimney; so the shortest and most direct heating pipes will lead to the large living room and to the dining room.

This big living room is a very attractive feature. In size it is 19 by 14 feet, with plenty of light and with a nook for books and a cozy corner in which to read them; both placed conveniently at the sides of the fireplace.

A triple casement window is built high enough in the exposed wall to place a fine big davenport under it and still have room in the outside corner for a large easy chair.

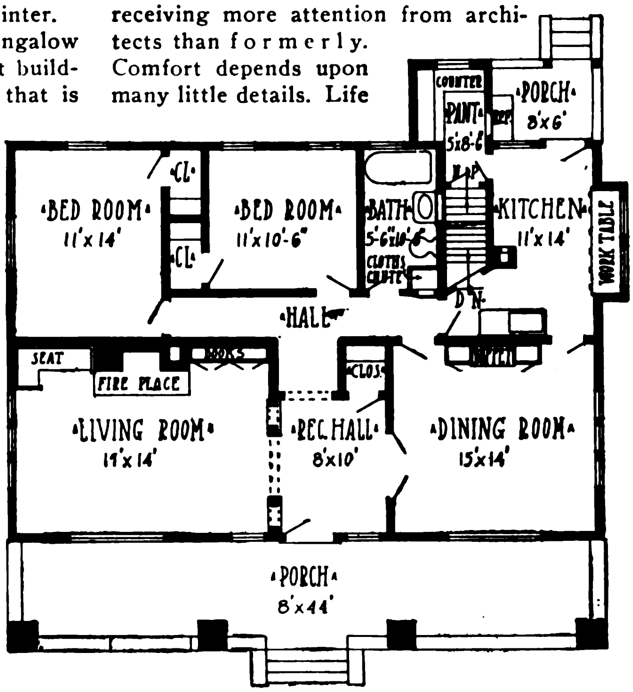
The proper placing of furniture is receiving more attention from architects than formerly. Comfort depends upon many little details. Life is made up of little things which in the aggregate amount to more than the big things, because there are so many of them.

The front door opens into a rather large, comfortable reception hall which really is an adjunct to the living room and is in very close connection with the dining room.

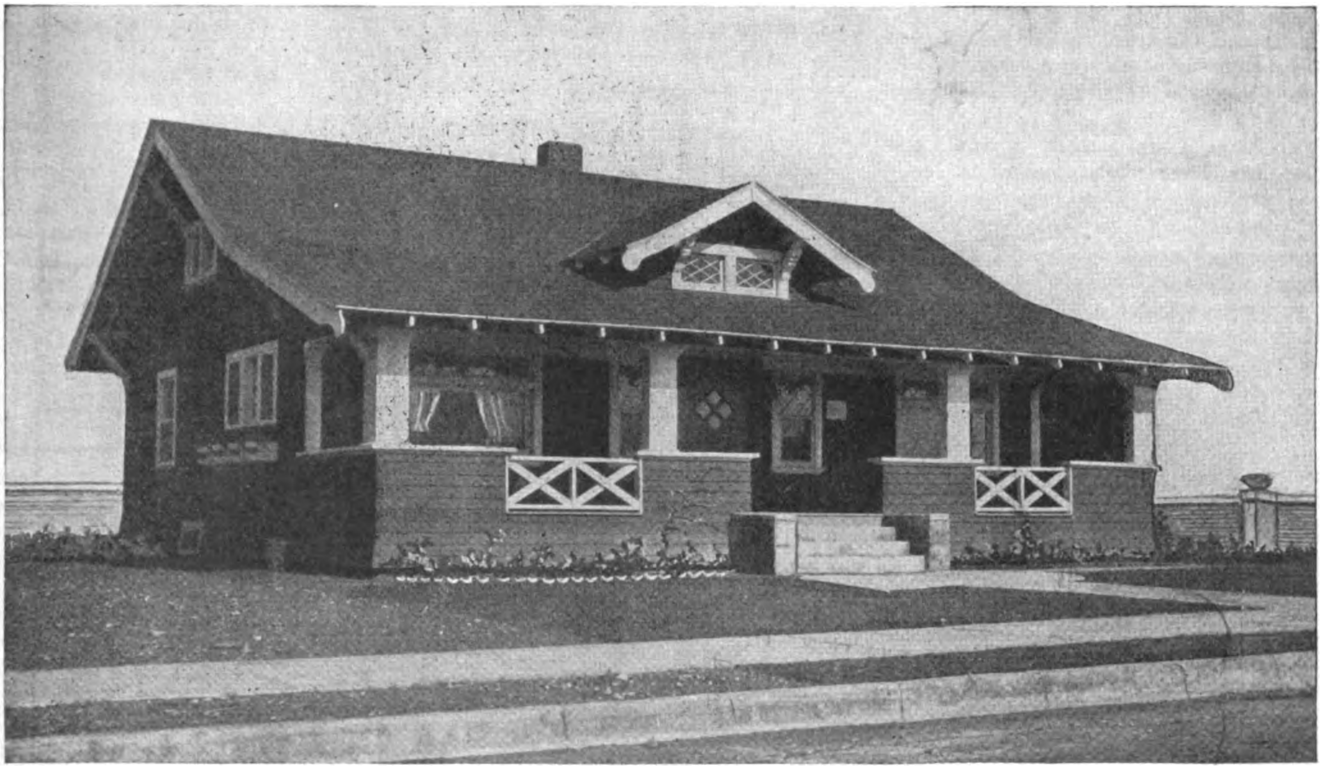
The rear porch with its cove to hold an ice box, also the large pantry, would be appreciated by every housekeeper.

There is a box window built on the side of the kitchen that adds a great deal to the pleasure of doing kitchen work. It is seldom that a kitchen table is treated to the luxury of having sufficient light. A lemon pie always goes together in the proper proportions when the ingredients are mixed together in a nook like this.

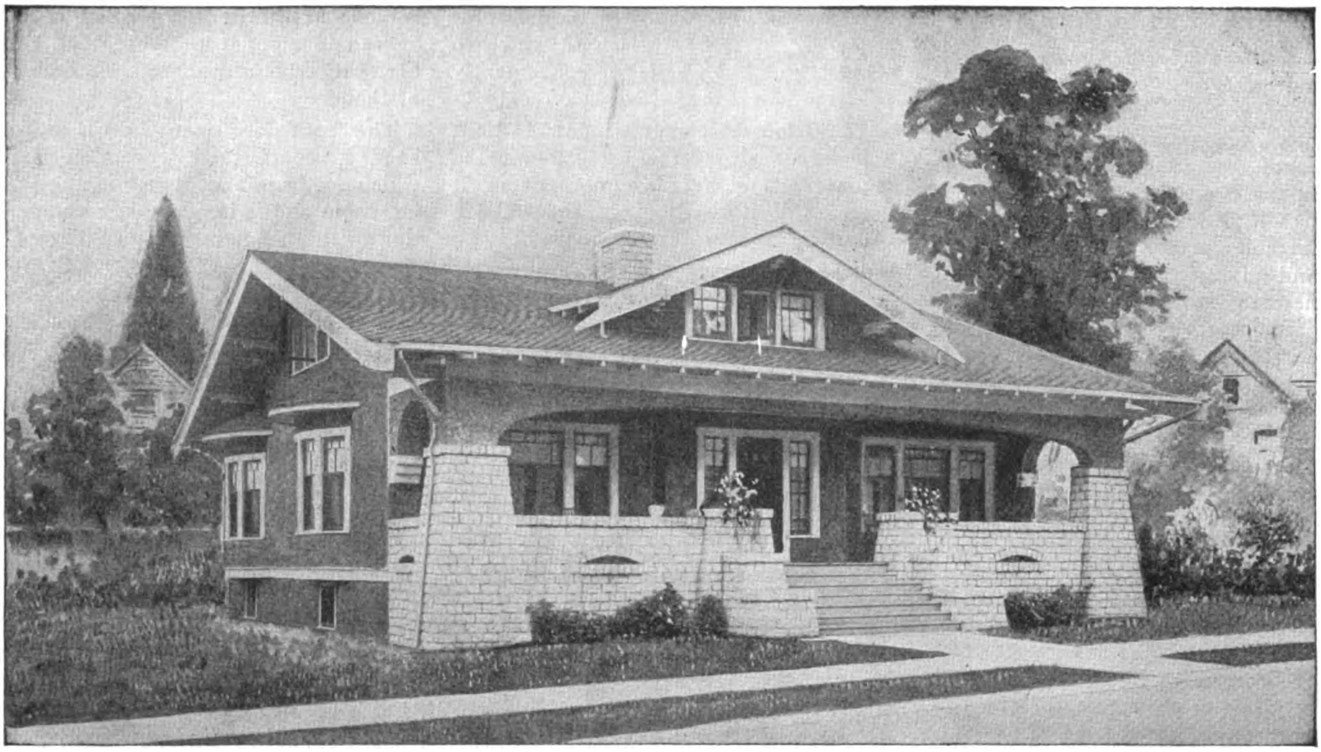
A real bungalow requires a lot of veranda room; and this plan supplies it in abundance. Any good housekeeper would take great delight in furnishing a good bungalow veranda as an outdoor reception room. The many inventions in porch and loggia furniture offer materials sufficient for many interesting dreams of such summer parlors.



Arrangement of Bungalow, Size, 44 by 29 Feet



A Typical California Bungalow Design. It is 44 by 29 feet in size, having five rooms and a bath room, with a good cellar and a stairway to the attic. We can furnish complete set of blue-printed working plans and typewritten specifications for only $7.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6607L.



An elegant home of generous proportions. Size 36 feet, 6 inches by 32 feet. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections, and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6633L.

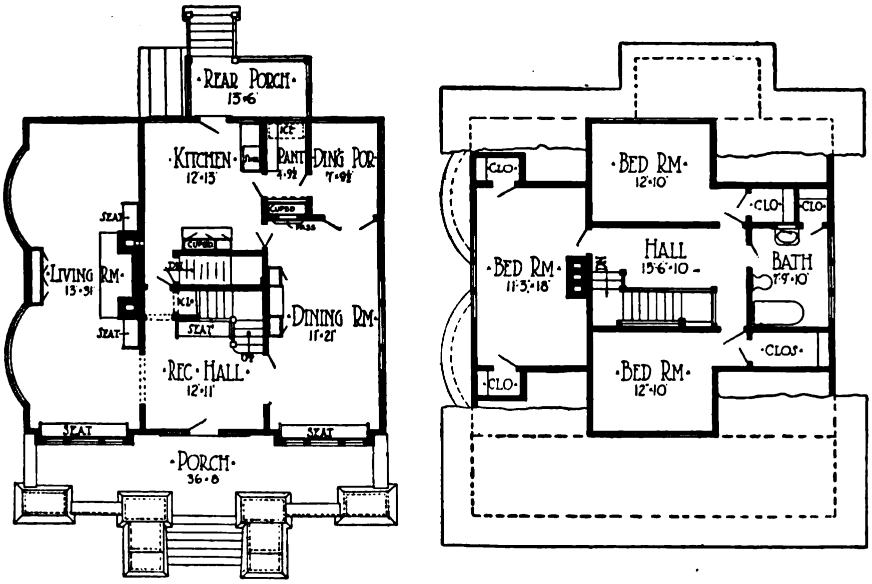
Elaborate Cement Stucco Bungalow

Chief among the special features of this beautiful bungalow is the great living room, 31 feet long, and occupying about one-third of the first floor. Two rounded bay windows with round roofs give a distinctive outside appearance to the sunny side of the house. This large living room is supposed to look toward the most interesting scenery. In the rear of this great room is a window set with fancy art glass, placed high enough above the floor to accommodate large pieces of heavy furniture underneath. There is a large fireplace in the center of the north side of this great room, which is designed especially to harmonize with its surroundings.

The wide roof projection over this end of the building is about equal to the projection of the small circular roof over the bays. The same effect is maintained in the front room dormer, the corner gable and veranda projections.

The front veranda is especially interesting from the manner in which it is built. The heavy front wall, with its corner piers and stepped center piers, present a massive front, which is both artistic and imposing. Spanning this front from one corner pier to the other a distance of 30 odd feet, is an archway which supports the roof. This archway leaves the view through the front windows free from obstruction, and the artistic effect is especially pleasing.

The wide spreading bungalow roof style of dormer, the windows of which light the front bedroom upstairs, is another very pleasing feature in the construction of this splendid house. This dormer and the two large gable ends of the house are finished in the same general manner, but are not exactly alike.



First Floor Plan

Second Floor Plan

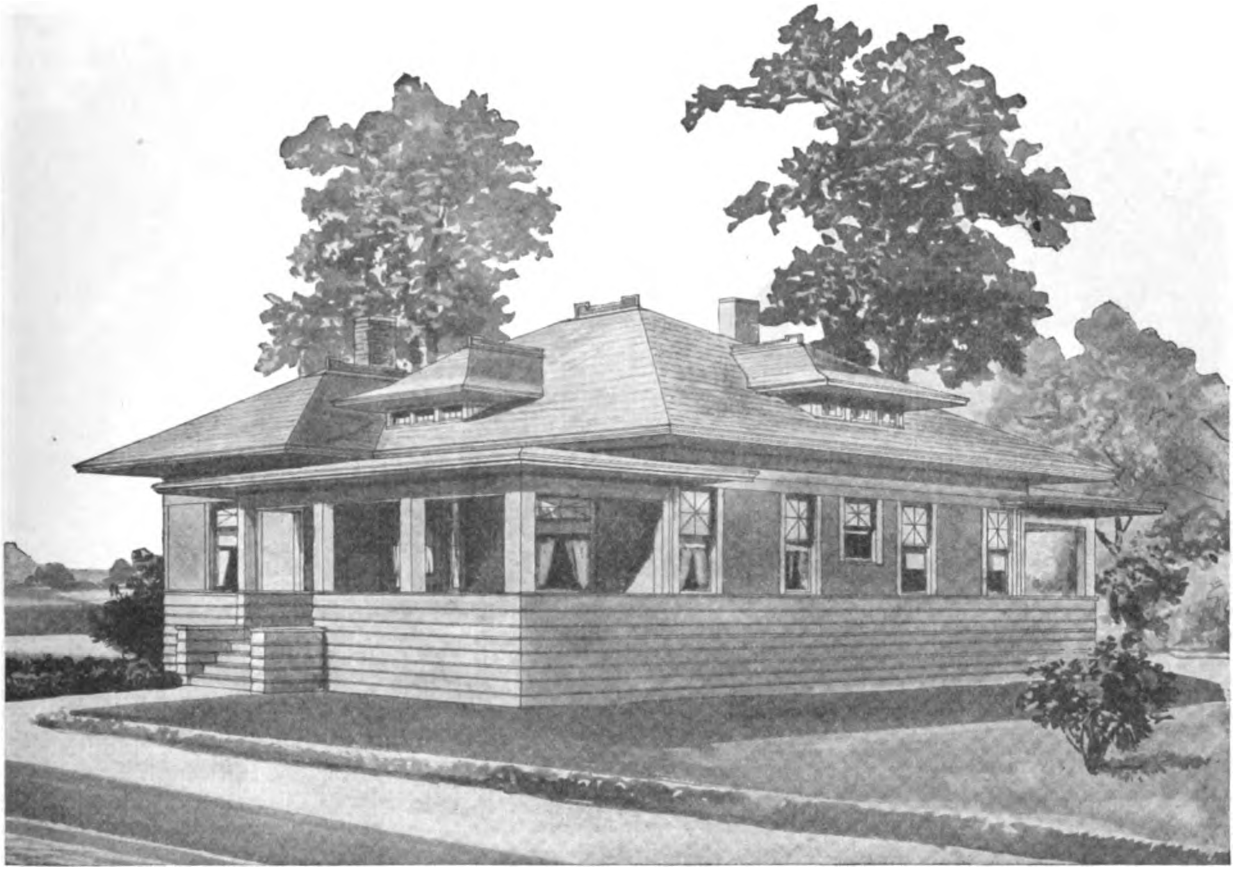
Arrangement of House, Size, 36 Feet 6 Inches by 32 Feet

To match cornices without making exact copies is an art in building that is being studied by leading architects.

In this house, the space for the bedrooms is practically all stolen from the attic. The expense is principally in the foundation and lower story. While the bedrooms are well planned and nicely arranged with plenty of room, the idea of planning them in this way is a noticeable economy.

The first floor plan shows a large reception hall of elegant appearance, due partly to the fine open stairway built of carefully designed artist millwork.

Another interesting feature of this plan is the loggia dining porch.



Southern style bungalow. Size, 40 by 49 feet, with five rooms and two good porches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 6086L.

Southern Style Bungalow

In the warmer sections of the country, bungalows are better appreciated; and they are built differently. In the plan of this Southern bungalow, the hallway runs straight through the center of the house from the front to the rear.

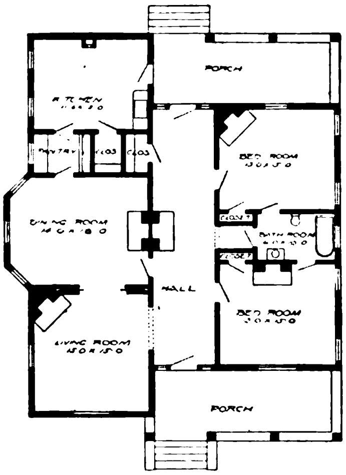
The bed rooms are on one side of this hallway, and the living rooms are on the other side. There are five rooms in all, consisting of two bed rooms, living room, dining room and kitchen.

The kitchen and dining room are connected by way of the pantry, vestibule fashion, with two doors which are intended to prevent odors from cooking and the heat from the kitchen from reaching through to the dining room.

As this design is intended for a mild climate, provision is made in every room for heating by means of open fires. The fire places are used after the old style of Southern houses that have been heated by fire place fires for two hundred years.

The laying out of this house gives an opportunity to build two good sized porches, one at the front and the other at the back. These porches add very much to the comfort of the house as well as general appearance.

In the South, there are a great many days during the year when it is very pleasant to remain outdoors if you have a good, comfortable porch and some easy chairs, with a roof to shut out the sun and a portion of the bright light. Two porches as arranged in this design are connected by the hall through the house, an arrangement that offers a pleasant retreat either one way or the other, according to the direction of the sun and wind.

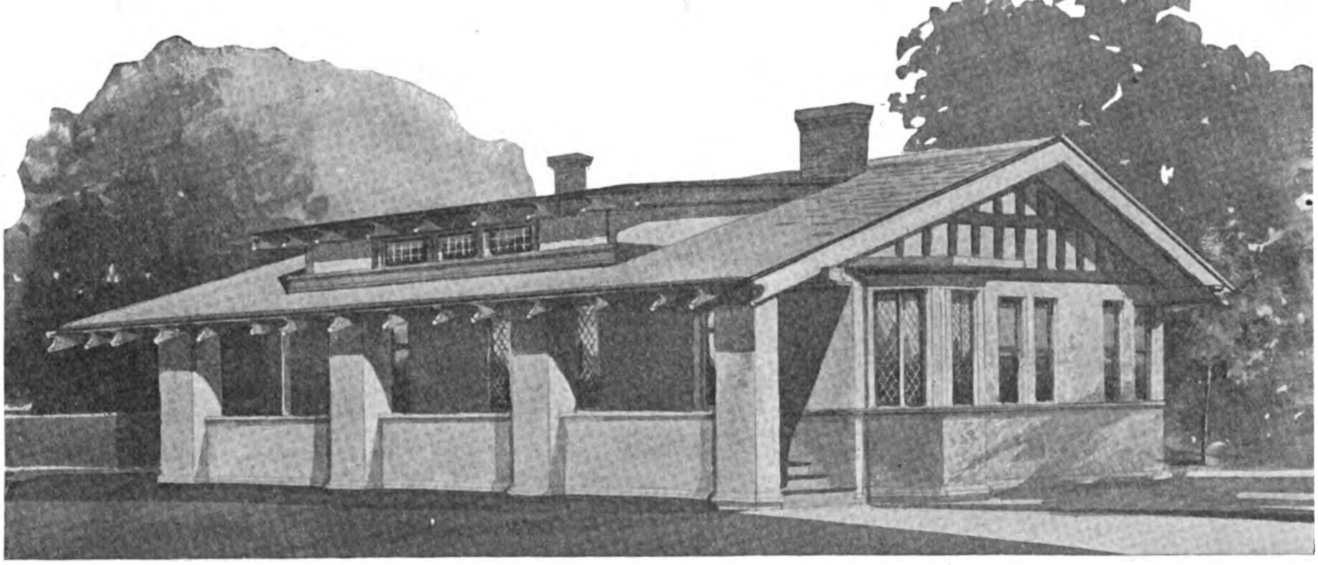


Floor Plan of Southern Bungalow, Size, 40 by 49 Feet

In building a bungalow, it is difficult to have enough closet room. Storage room always is at a premium in a bungalow. However, this design does very well in this respect, because there is an extra closet convenient to the bedrooms opening into the back end of the hall.

In this plan, the kitchen has received very careful attention. A kitchen is a woman's work shop. It should be one of the most attractive rooms in the house because a great deal of time is spent in the kitchen. This arrangement has a door to the side porch which offers an opportunity to take part of the work out into the open air.

Both porches in this plan are wainscoted and have square posts, so it is easy to fit screens in panel form. Some housekeepers have the rear porch carefully screened and furnished with comfortable, homelike furniture that makes this part of the house very attractive to members of the family and their intimate friends. The front porch is more elaborately furnished and is held sacred for greater formality.



Western bungalow that is very well liked. Size 38 by 36 feet 6 inches. We can furnish complete set of blue-printed working plans and typewritten specifications for only $8.00 per set. Blue-prints consist of basement plan; roof plan; first and second floor plans; front, rear, two side elevations; wall sections; and all necessary interior details. Specifications consist of twenty-two pages of typewritten matter. When ordering, ask for Design No. 5002L.

Western Bungalow

There is considerable room in the bungalow shown in design No. 5002L, although the ground space is only 38 feet by 36 feet 6 inches.

Modern houses must have a good sized living room that is either partitioned off as a living room or arranged in connection with the hall, or expanded in some other way. In this plan, the living room, hall, and dining room all open together; the divisions are marked only with grills that do not interfere, moreover adding considerably to the ornamental effect.

Modern furniture is larger than the old-fashioned sort, and architects are obliged to make room for big davenports, chairs and cabinets of different kinds.

This living-hall-dining-room has a beam ceiling and is decorated as one room. It makes a fine room, 12 feet in width by nearly 38 feet in length. The furnishings call for three rugs of the same pattern and furniture to match, that is, if a mahogany piano is placed in the hall, and upholstered chairs in the living room, there should be a mahogany dining table and upholstered mahogany dining chairs in the dining room end of this great room.

It offers a problem in decoration that any good housekeeper would be delighted to tackle, provided she has the necessary money to do justice to the occasion.

The two window seats, of course, will be upholstered to match the general color scheme. These seats take the place of choirs to a certain extent, and help materially in the general decorative plan. The fireplace may be finished in colors suitable to work in with the furnishings.

The arrangement of the bath room and bed rooms is different from most bungalows. One principal requirement demanded of architects is to separate the sleeping rooms from the living rooms. It is not easily done, but this plan solves the difficulty splendidly, and does it without a long, dark hallway. The bath room is conveniently arranged for each bed room without being connected with any.

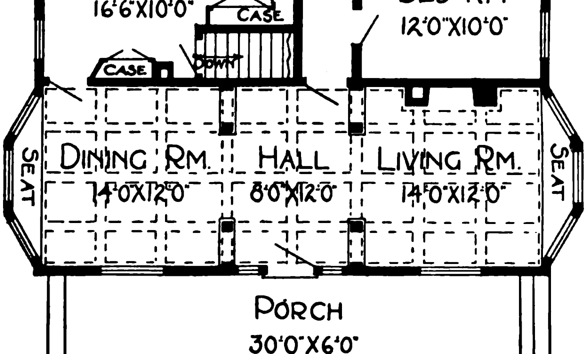
It is not necessary to have a pantry when the kitchen is finished with a built-in cupboard divided off in compartments as this plan provides. With a china cabinet in the dining room, the two cases in the kitchen and shelves in the cellar stairway are considered by many housekeepers to be more convenient than a regular pantry. In connection with the kitchen is a built-in porch which also makes a very comfortable work room when it is carefully screened.

A very decorative feature of this plan is the veranda which reaches clear across the front. A veranda as long as this offers room for porch furniture that is comfortable and attractive in appearance.

It is impossible to have good looking outdoor furniture unless there is room to place it in such a way as to look and feel comfortable. So many families would like to have a swinging porch seat, 6 feet in length, inside measurement, and wide enough to make a comfortable lounge, but few houses afford the necessary space.

The rooms in this house are all comfortable, well lighted, and well arranged for easy maintenance.

Altogether, the design and plan of this western bungalow are very satisfactory.



Floor Plan of Bungalow, Size, 38 by 36 Feet 6 Inches

RECORD OF FIELD CROPS

KIND OF CROP____________________________
Where planted____________________________ How fertilized__________
Rotation of crops on this land____________________ Seed per acre__________
No. of acres_____ Bushels per acre_____ Cost per acre_____ Total No. bushels_____ Cost per bushel_______
Commenced planting_____ Finished planting_____ Commenced harvesting________ Finished harvesting________
Weather—May______ June______ July______ Aug.______ Sept.______.

KIND OF CROP____________________________
Where planted____________________________ How fertilized__________
Rotation of crops on this land____________________ Seed per acre__________
No. of acres_____ Bushels per acre_____ Cost per acre_____ Total No. bushels_____ Cost per bushel_______
Commenced planting_____ Finished planting_____ Commenced harvesting________ Finished harvesting________
Weather—May______ June______ July______ Aug.______ Sept.______.

KIND OF CROP____________________________
Where planted____________________________ How fertilized__________
Rotation of crops on this land____________________ Seed per acre__________
No. of acres_____ Bushels per acre_____ Cost per acre_____ Total No. bushels_____ Cost per bushel_______
Commenced planting_____ Finished planting_____ Commenced harvesting________ Finished harvesting________
Weather—May______ June______ July______ Aug.______ Sept.______.

KIND OF CROP____________________________
Where planted____________________________ How fertilized__________
Rotation of crops on this land____________________ Seed per acre__________
No. of acres_____ Bushels per acre_____ Cost per acre_____ Total No. bushels_____ Cost per bushel_______
Commenced planting_____ Finished planting_____ Commenced harvesting________ Finished harvesting________
Weather—May______ June______ July______ Aug.______ Sept.______.

KIND OF CROP____________________________
Where planted____________________________ How fertilized__________
Rotation of crops on this land____________________ Seed per acre__________
No. of acres_____ Bushels per acre_____ Cost per acre_____ Total No. bushels_____ Cost per bushel_______
Commenced planting_____ Finished planting_____ Commenced harvesting________ Finished harvesting________
Weather—May______ June______ July______ Aug.______ Sept.______.

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Weather—May______ June______ July______ Aug.______ Sept.______.

KIND OF CROP______________
Where planted____________How fertilized________
Rotation of crops on this land________Seed per acre_____
No. of acres______ Bushels per acre______ Cost per acre_____ Total No. bushels_____ Cost per bushel_____
Commenced planting______ Finished planting______
Commenced harvesting________ Finished harvesting________ Weather—May________ June________
July______ Aug.______ Sept.______.

KIND OF CROP______________
Where planted____________How fertilized________
Rotation of crops on this land________Seed per acre_____
No. of acres______ Bushels per acre______ Cost per acre_____ Total No. bushels_____ Cost per bushel_____
Commenced planting______ Finished planting______
Commenced harvesting________ Finished harvesting______ Weather—May________ June________
July______ Aug.______ Sept.______.

Show diagram of Farm here. Designate the several fields with letters or numbers for handy reference purposes.

A convenient and permanent place for making note of facts and figures of lasting importance and interest to the farmer and his family.

LIVE STOCK RECORD

	Date	To Whom Sold or Where Shipped	Number	Weight	Price	Commission and Freight	Amount Received
Hogs							
Cattle							
Horses							
Sheep							

RECORD OF DAIRY PRODUCTS

	Date	Sold to Whom	Quantity Sold	No. Cows Milked	Remarks	Unit Price Received	Amount Received
Butter							
Cream							
Whole Milk							

POULTRY RECORD

Hens hatch in three weeks; ducks, turkeys and geese in four.

Date Set	Fowl Set	Kind and Source of Eggs	How Many	When Due	Result of Hatch

Egg Record for Year Beginning ________________ 19________

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total for Month	Cash Value
Jan.																																	
Feb.																																	
March																																	
April																																	
May																																	
June																																	
July																																	
Aug.																																	
Sept.																																	
Oct.																																	
Nov.																																	
Dec.																																	
																															Total for Year		

Number of Fowls at beginning of Record........................ Value, $.....................Number of Fowls at end of Record.................... Value, $................ Record of Eggs Sold, $..................., of Fowls Sold,$..........
Estimated Value of Fowls Eaten, $.................., of Eggs Eaten, $............ Estimated Value of Feed for Year, $......

Breeding Reference Table

	Jan.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	Dec.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	Jan.
COW	Oct.	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	Nov.
SOW	Apr.	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	May
EWE	May	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	June
	Feb.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28				
MARE	Jan.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31				Jan.
COW	Nov.	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6				Dec.
SOW	May	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20				June
EWE	June	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25				July
	Mch.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	Feb.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	1	2	3	Mch.
COW	Dec.	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	Jan.
SOW	June	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	July
EWE	July	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Aug.
	Apr.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
MARE	Mch.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2		Apr.
COW	Jan.	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5		Feb.
SOW	July	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		Aug.
EWE	Aug.	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Sept.
	May	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	Apr.	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	May
COW	Feb.	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	1	2	3	4	5	6	7	8	Mch.
SOW	Aug.	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Sept.
EWE	Sept.	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Oct.
	June	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
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SOW	Sept.	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		Oct.
EWE	Oct.	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Nov.
	July	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	June	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	July
COW	Apr.	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	May
SOW	Oct.	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Nov.
EWE	Nov.	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Dec.
	Aug.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	July	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	Aug.
COW	May	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	June
SOW	Nov.	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Dec.
EWE	Dec.	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	Jan.
	Sept.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
MARE	Aug.	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2		Sept.
COW	June	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	6	7	8		July
SOW	Dec.	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20		Jan.
EWE	Jan.	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24		Feb.
	Oct.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	Sept.	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	Oct.
COW	July	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	Aug.
SOW	Jan.	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	Feb.
EWE	Feb.	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	Mch.
	Nov.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30		
MARE	Oct.	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1		Nov.
COW	Aug.	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6		Sept.
SOW	Feb.	20	21	22	23	24	25	26	27	28	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		Mch.
EWE	Mch.	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25		Apr.
	Dec.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
MARE	Nov.	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	Dec.
COW	Sept.	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	1	2	3	4	5	3	7	Oct.
SOW	Mch.	22	23	24	25	26	27	28	29	30	31	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	Apr.
EWE	Apr.	26	27	28	29	30	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	May

The table shown above is easily understood. The rows of figures between the lines give the date of service. Directly below is given a corresponding row of birthdates for each class of animal. For instance: If a mare is bred on August 1st, she will be due to foal on July 4th of the following year. A sow, bred on January 1st, will farrow about April 23d of the same year. Of course, these figures are only approximately correct, as no two animals are exactly alike in this respect any more than in many others, but for general purposes the table reliable and should be preserved for reference.

Keep Stock Record and other important memoranda on next two pages

If your neighbor is going to build tell him about this book—and do both him and us a good turn

Farmers' Memoranda

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Farmers' Memoranda

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